Di250

SERVICE MANUAL

[GENERAL]

Safety Precautions for Inspection and Service

When performing inspection and service procedures, observe the following precautions to prevent accidents and ensure utmost safety.

✻ Depending on the model, some of the precautions given in the following do not apply.

Different markings are used to denote specific meanings as detailed below.

WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

The following graphic symbols are used to give instructions that need to be observed.

Used to call the service technician's attention to what is graphically represented inside the marking (including a warning).

Used to prohibit the service technician's from doing what is graphically represented inside the marking.

Used to instruct the service technician's to do what is graphically represented inside the marking.

WARNING

1. Always observe precautions.

- Parts requiring special attention in this product will include a label containing the mark shown on the left plus precautionary notes. Be sure to observe the precautions.
- Be sure to observe the "Safety Information" given in the Operator's Manual.

2. Before starting the procedures, be sure to unplug the power cord.

- This product contains a high-voltage unit and a circuit with a large current capacity that may cause an electric shock or burn.
- The product also contains parts that can jerk suddenly and cause injury.
- If this product uses a laser, laser beam leakage may cause eye damage or blindness.

3. Use the specified parts.

- For replacement parts, always use the genuine parts specified in the manufacturer's parts manual. Installing a wrong or unauthorized part could cause dielectric breakdown, overload, or undermine safety devices resulting in possible electric shock or fire.
- Replace a blown electrical fuse or thermal fuse with its corresponding genuine part specified in the manufacturer's parts manual. Installing a fuse of a different make or rating could lead to a possible fire. If a thermal fuse blows frequently, the temperature control system may have a problem and action must be taken to eliminate the cause of the problem.

4. Handle the power cord with care and never use a multiple outlet.

- Do not break, crush or otherwise damage the power cord. Placing a heavy object on the power cord, or pulling or bending it may damage it, resulting in a possible fire or electric shock.
- Do not use a multiple outlet to which any other appliance or machine is connected.
- Be sure the power outlet meets or exceeds the specified capacity.

5. Be careful with the high-voltage parts.

- A part marked with the symbol shown on the left carries a high voltage. Touching it could result in an electric shock or burn. Be sure to unplug the power cord before servicing this part or the parts near it.

6. Do not work with wet hands.

- Do not unplug or plug in the power cord, or perform any kind of service or inspection with wet hands. Doing so could result in an electric shock.

7. Do not touch a high-temperature part.

- A part marked with the symbol shown on the left and other parts such as the exposure lamp and fusing roller can be very hot while the machine is energized. Touching them may result in a burn.
- Wait until these parts have cooled down before replacing them or any surrounding parts.

8. Maintain a grounded connection at all times. (This item may not apply in the USA.)

- Be sure to connect the ground wire to the ground terminal even when performing an inspection or repair. Without proper grounding, electrical leakage could result in an electric shock or fire.
- Never connect the ground wire to a gas pipe, water pipe, telephone ground wire, or a lightning conductor.

9. Do not remodel the product.

- Modifying this product in a manner not authorized by the manufacturer may result in a fire or electric shock. If this product uses a laser, laser beam leakage may cause eye damage or blindness.

10. Restore all parts and harnesses to their original positions.

- To promote safety and prevent product damage, make sure the harnesses are returned to their original positions and properly secured in their clamps and saddles in order to avoid hot parts, high-voltage parts, sharp edges, or being crushed.
- To promote safety, make sure that all tubing and other insulating materials are returned to their original positions. Make sure that floating components mounted on the circuit boards are at their correct distance and position off the boards.

CAUTION

1. Precautions for Service Jobs

- A toothed washer and spring washer, if used originally, must be reinstalled. Omitting them may result in contact failure which could cause an electric shock or fire.
- When reassembling parts, make sure that the correct screws (size, type) are used in the correct places. Using the wrong screw could lead to stripped threads, poorly secured parts, poor insulating or grounding, and result in a malfunction, electric shock or injury.
- Take great care to avoid personal injury from possible burrs and sharp edges on the parts, frames and chassis of the product.
- When moving the product or removing an option, use care not to injure your back or allow your hands to be caught in mechanisms.

2. Precautions for Servicing with Covers and Parts Removed

- Wherever feasible, keep all parts and covers mounted when energizing the product.
- If energizing the product with a cover removed is absolutely unavoidable, do not touch any exposed live parts and use care not to allow your clothing to be caught in the moving parts. Never leave a product in this condition unattended.
- Never place disassembled parts or a container of liquid on the product. Parts falling into, or the liquid spilling inside, the mechanism could result in an electric shock or fire.
- Never use a flammable spray near the product. This could result in a fire.
- Make sure the power cord is unplugged before removing or installing circuit boards or plugging in or unplugging connectors.
- Always use the interlock switch actuating jig to actuate an interlock switch when a cover is opened or removed. The use of folded paper or some other object may damage the interlock switch mechanism, possibly resulting in an electric shock, injury or blindness.

3. Precautions for the Working Environment

- The product must be placed on a flat, level surface that is stable and secure.
- Never place this product or its parts on an unsteady or tilting workbench when servicing.
- Provide good ventilation at regular intervals if a service job must be done in a confined space for a long period of time.
- Avoid dusty locations and places exposed to oil or steam.
- Avoid working positions that may block the ventilation ports of the product.

4. Precautions for Handling Batteries

- Replace a rundown battery with the same type as specified in the manufacturer's parts manual.
- Before installing a new battery, make sure of the correct polarity of the installation or the battery could burst.
- Dispose of used batteries according to the local regulations. Never dispose of them at the user's premises or attempt to try to discharge one.

5. Precautions for the Laser Beam (Only for Products Employing a Laser)

- Removing the cover marked with the following caution label could lead to possible exposure to the laser beam, resulting in eye damage or blindness. Be sure to unplug the power cord before removing this cover.
- If removing this cover while the power is ON is unavoidable, be sure to wear protective laser goggles that meet specifications.
- Make sure that no one enters the room when the machine is in this condition.
- When handling the laser unit, observe the “Precautions for Handling Laser Equipment.”

注意– ここを開くと不可視レーザ光が出ます。ビームを直接見たり、触れたりしないでください。
CAUTION- INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
VORSICHT- UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN
ADVARSEL- USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN
VARO! AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE ÄLÄ KATSO SÄTEESEEN
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注意： 当您打开这里时，会出现肉眼看不见的激光射线，请不要直视或接触光线。

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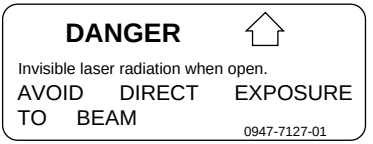

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Other Precautions

- To reassemble the product, reverse the order of disassembly unless otherwise specified.
- While the product is energized, do not unplug or plug connectors into the circuit boards or harnesses.
- The magnet roller generates a strong magnetic field. Do not bring it near a watch, floppy disk, magnetic card, or CRT tube.
- An air gun and vacuum cleaner generates a strong electrostatic charge that can destroy the ATDC sensor and other sensors. Before cleaning a component with one of these devices, be sure to remove all the sensors. Otherwise, use a blower brush and cloth when cleaning parts.
- When handling circuit boards with MOS ICs, observe the “INSTRUCTIONS FOR HANDLING THE PWBs WITH MOS ICs” (applicable only to the products using MOS ICs).
- The PC Drum is a very delicate component. Observe the precautions given in “HANDLING OF THE PC DRUM” because mishandling may result in serious image problems.
- Note that replacement of a circuit board may call for readjustments or resetting of particular items, or software installation.
- After completing a service job, perform a safety check. Make sure that all parts, wiring and screws are returned to their original positions.
- Check the area surrounding the service site for any signs of damage, wear or need of repair.
- Do not pull out the toner hopper while the toner bottle is turning. This could result in a damaged hopper motor or locking mechanism.
- If the product is to be run with the front door open, make sure that the toner hopper is in the locked position.

Used Batteries Precautions

ALL Areas

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

Germany

VORSICHT!

Explosionsgefahr bei unsachgemäßem Austausch der Batterie.
Ersatz nur durch denselben oder einen vom Hersteller empfohlenen ähnlichen Typ.
Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

France

ATTENTION

Ily a danger d'explosion s'ily a remplacement incorrec de la batterie.
Remplacer uniquement avec une batterie du meme type ou d'un type équivalent recommande par le constructueur.
Mettre au rebut les batteries usageés conformément aux instructions du fabricant.

Denmark

ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

Norway

ADVARSEL

Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

Sweden

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

Finland

VAROITUS

Paristo voi räjähtää, los se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä Käytetty paristo valmistajan ohjeiden mukaisesti.

Di250

GENERAL

MINOLTA

CONTENTS

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1 SAFETY INFORMATION

Laser Safety

This is a digital machine which prints by means of a laser. There is no possibility of danger from the laser, provided the machine is operated according to the instructions in this manual.

Since radiation emitted by the laser is completely confined within protective housing, the laser beam cannot escape from the machine during any phase of user operation.

This machine is certified as a Class 1 product. This means the machine does not produce hazardous laser radiation.

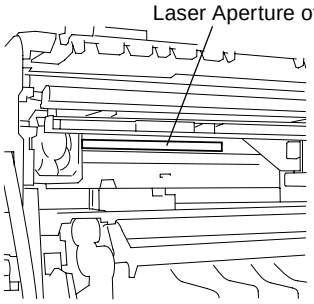
CAUTION: The use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure. Because of this, Minolta strongly recommends that you operate your copy machine only as described in this documentation.

Internal Laser Radiation

Maximum Average Radiation Power: 36.7μW at laser aperture of the print head unit

Wavelength: 770-810nm

This product employs a Class IIIb Laser Diode that emits an invisible laser beam.
The Laser Diode and Scanning Polygon Mirror are incorporated in the print head unit.
The print head unit is NOT A FIELD SERVICE ITEM.
Therefore, the print head unit should not be opened under any circumstances.



This figure shows the view inside the Right Side Door with the Imaging Unit removed.

For United States

CDRH regulation

This copier is certified as a Class 1 Laser product under the Radiation Performance Standard according to the Food, Drug and Cosmetic Act of 1990. Compliance is mandatory for Laser products marketed in the United States and is reported to the Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration of the U.S. Department of Health and Human Services (DHHS). This means that the device does not produce hazardous laser radiation.

The label shown on page G-3 indicates compliance with the CDRH regulations and must be attached to laser products marketed in the United States.

CAUTION: Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

This is a semiconductor laser. The maximum power of the laser diode is 5mW and the wavelength is 770-810nm.

For Europe

CAUTION: Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

This is a semiconductor laser. The maximum power of the laser diode is 5mW and the wavelength is 770-810nm.

For Denmark

ADVARSEL
Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion.
Undgå udsættelse for stråling.

Klasse 1 laser produkt der opfylder IEC60825 sikkerheds kravene.

For Finland

LUOKAN 1 LASERLAITE

VAROITUS
Laitteen käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARO
Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättomälle lasersäteilylle. Älä katso säteeseen.

For Sweden

KLASS 1 LASER APPARAT

VARNING
Om apparaten används på annat sätt än i denna bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

VARNING
Osynlig laserstråining när denna del är öppnad och spärren är urkopplad. Betrakta ej stråien.

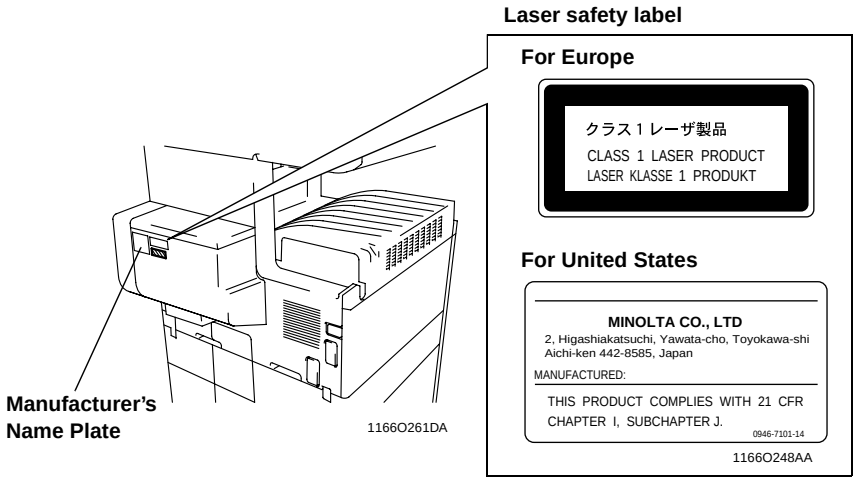
For Norway

ADVERSEL
Dersom apparatet brukes på annen måte enn spesifisert i denne bruksanvisning, kan brukeren utsettes för unsynlig laserstrålning, som overskrider grensen for laser klass 1.

Dette en halveder laser. Maksimal effekt till laserdiode er 5mW og bϕlgelengde er 770-810nm.

Laser Safety Label

A laser safety label is attached to the outside of the copy machine as shown below.



The Manufacturer's Name Plate is affixed at the position illustrated above.
Please write down the Model Name and Serial No. of your copier here.

Model:
Serial No.:

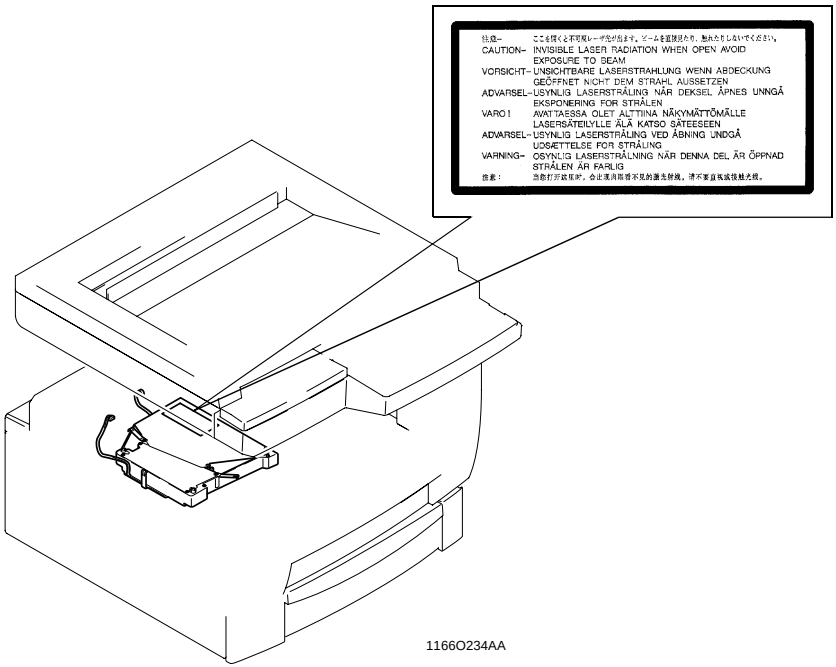
Label inside copy machine

The following laser safety label will be attached inside the copy machine as shown below.

Please read the following for your own protection.

⚠ Caution

Opening the cover indicated by the Caution label may expose you to harmful laser radiation which could cause damage or loss of eyesight. Do not open the cover when the power is on.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VARNING– OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD STRÅLEN ÄR FARLIG
注意： 当您打开这里时，会出现肉眼看不见的激光辐线，请不要直视或接触光线。

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ALL Areas

CAUTION
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type
recommended by the manufacturer.
Dispose of used batteries according
to the manufacturer's instructions.

Germany only

VORSICHT!
Explosinsgefahr bei unsachgemäßen austausch der
batterie. Ersatz nur durch denselben oder einen vom hersteller
empfohlenen ähnlichen typ. Entsorgung gebrauchter batterien
nach angaben des herstellers.

Denmark only

ADVARSEL!
Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

Norway only

ADVARSEL
Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende
type anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens
instruksjoner.

Sweden only

VARNING
Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens
instruktion.

Finland only

VAROITUS
Paristo voi räjähtää, los se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppiin. Hävitä Käytetty paristo valmistajan ohjeiden
mukaisesti.

ALL Areas

CAUTION

“Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used IC Package according to the manufacturer’s instructions.”

Germany only

VORSICHT!

⇒”Austausch nur durch denselben oder einen vom Hersteller empfohlenen, gleichwertigen typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

Service Precautions

(1) Precautions

Refer to DISASSEMBLY/CLEANING for the Disassembly procedure.

1. When unplugging connectors on the P.W.B.s themselves, always make sure the power is OFF first. Be sure to unplug the copier before disassembling and cleaning.
2. Always unplug connectors by holding the connector housing. Pulling on the wires can lead to problems with poor contact.
3. It is recommended that a body ground not be used when carrying out any troubleshooting procedure. Be sure to ground DC lines to a ground test point on the P.W.B.

(2) At Replacement/Adjustment/Cleaning

1. Be sure to handle the Fusing Unit carefully. It remains hot a while after the copier is turned off.
2. Do not disassemble the Imaging Cartridge or Print Head Unit.
3. Do not expose the PC Drum of the Imaging Cartridge to direct sunlight or to room lighting for more than 5 minutes.
4. Turn off the power before removing the Print Head Unit to protect the eyes from possible exposure to the laser beam.
5. Use only a Fuse of the indicated rating.

(3) During Operation

1. Keep your hands, clothing, etc. well away from operating or rotating parts.
2. Never touch the terminals of electrical parts or high voltage parts.
3. This copier uses an invisible laser beam. To prevent a laser beam leak, the copier performs a trial run to make sure the covers are in position.

Handling the P.W.B.

Observe the following precautions when handling a P.W.B. with ICs.

(1) During Transportation/Storage

1. During transport and storage, P.W.B.s should be kept in conductive bags or on mats and not taken out unless absolutely necessary.
2. P.W.B.s should be stored in a place where direct sunlight does not strike them.
3. Do not touch IC terminals with your hands.

(2) At Replacement

1. Before removing connectors from a P.W.B., make sure the copier has been unplugged.
2. When P.W.B.s are taken out of their conductive bags or off their mats, hold them by their edges to avoid touching the terminals or the patterned surfaces.
3. Before installing connectors on a P.W.B., make sure the copier has been unplugged.

2 SPECIFICATIONS

TYPE	:	Console/Desktop Type
PHOTOCONDUCTOR	:	Organic Photoconductor
COPYING SYSTEM	:	Electrostatic Dry Powdered Image Transfer to Plain Paper with a Laser
ORIGINAL SCANNING RESOLUTION	:	600 dpi
PAPER FEEDING SYSTEM	:	3-way system – Manual Feed Tray: Single sheet feeding – Multi-Purpose (MP) Cassette: Plain paper: Approx. 250 sheets Special paper: Approx. 20 sheets – 500-Sheet Cassette: Approx. 500 sheets
EXPOSURE SYSTEM	:	Mirror Scanning, Slit Exposure
DEVELOPING SYSTEM	:	MT-HG System
CHARGING SYSTEM	:	Comb Electrode (1) DC Negative Corona with Scorotron System
IMAGE TRANSFER	:	Roller Image Transfer
PAPER SEPARATING SYSTEM	:	Paper Separator Fingers and Charge Neutralizing Plate
FUSING SYSTEM	:	Heat Roller
PAPER DISCHARGING SYSTEM	:	Charge Neutralizing Brush
MAXIMUM ORIGINAL SIZE	:	A3L, 11" × 17"L

COPY MEDIUM

Paper Source		MP Cassette	Manual Feed Tray
Medium	Plain paper (60 to 90 g/m^2)	❍	❍
	Transparencies	❍	❍
	Thick paper (91 to 157 g/m^2)	❍	❍
	Postcards (190 g/m^2)	❍	❍
	Recycled paper	❍	❍
Dimensions	Maximum (Width × Length)	297 × 432 mm	297 × 432 mm
	Minimum (Width × Length)	90 × 140 mm	90 × 140 mm

❍: Permissible –: Not permissible

MULTIPLE COPIES	:	1 to 99
WARMING-UP TIME	:	60 sec. or less with room temperature of 23°C and rated power voltage
FIRST COPY TIME	:	5.8 sec. (A4C, MP Cassette, full size mode) 5.9 sec. (8-1/2" × 11"C, MP Cassette, full size mode)

CONTINUOUS COPY SPEED (copies/min.)

- Metric -

Size	Speed
A3L	14
B4L	16
A4L	19
A4C	25
B5L	22
B5C	29

- Inch -

Size	Speed
11" × 17"L	14
8-1/2" × 14"L	17
8-1/2" × 11"L	20
8-1/2" × 11"C	25

ZOOM RATIOS

		- Metric -	- Inch -
Fixed	Full Size	× 1.000	× 1.000
	Enlargement	× 2.000 × 1.414 × 1.224 × 1.154	× 2.000 × 1.545 × 1.294 × 1.214
	Reduction	× 0.866 × 0.816 × 0.707 × 0.500	× 0.785 × 0.733 × 0.647 × 0.500
Variable	25% to 400% (in 0.1% increments)		

LENS : Through Lens (F = 4.0, f = 62 mm)
EXPOSURE LAMP : Fluorescent Lamp
FUSING TEMPERATURE : 190°C

POWER/CURRENT CONSUMPTION (Copier Only)

Exposure Lamp (Rating)	Fusing Roller Heater Lamp (Rating)	Max. Power Consumption (full system)	Max. Current Consumption (full system)
24V 20W	660W	850W	120V, 8A 230V, 4A

POWER REQUIREMENTS : 120V, 230V, 50/60Hz

ENVIRONMENTAL CONDITIONS

Temperature	10 to 32°C with a fluctuation of 10°C or less per hour
Humidity	15 to 85% RH with a fluctuation of 10% RH or less per hour
Ambient Illumination	3,000 lux or less
Levelness	1° (1.75 mm/100 mm)

DIMENSIONS : Width ... 566 mm, 22-1/4"
Depth ... 707 mm, 27-3/4"
Height ... 635 mm, 25"
WEIGHT : 53.5 kg, 118 lbs.

3 PRECAUTIONS FOR INSTALLATION

Installation Site

To ensure safety and utmost performance of the copier, the copier should NOT be used in a place:

- Where it will be subjected to extremely high or low temperature or humidity.
- Which is exposed to direct sunlight.
- Which is in the direct air stream of an air conditioner, heater or ventilator.
- Which puts the operator in the direct stream of exhaust from the copier.
- Which has poor ventilation.
- Where ammonia gas might be generated.
- Which does not have a stable, level floor.
- Where it will be subjected to sudden fluctuations in either temperature or humidity. If a cold room is quickly heated, condensation forms inside the copier, resulting in blank spots in the copy.
- Which is near any kind of heating device.
- Where it may be splashed with water.
- Which is dirty or where it will receive undue vibration.
- Which is near volatile flammables or curtains.

Power Source

Use an outlet with a capacity of 120V/8A, or 220V to 240V/4A or more.

- If any other electrical equipment is sourced from the same power outlet, make sure that the capacity of the outlet is not exceeded.
- Use a power source with little voltage fluctuation.
- Never connect by means of a multiple socket any other appliances or machines to the outlet being used for the copier.
- Make the following checks at frequent intervals:
  ✻ Is the power plug abnormally hot?
  ✻ Are there any cracks or scrapes in the cord?
  ✻ Has the power plug been inserted fully into the outlet?
  ✻ Does something, including the copier itself, ride on the power cord?
- Ensure that the copier does not ride on the power cord or communications cable of other electrical equipment, and that it does not become wedged into or underneath the mechanism.

Grounding

To prevent receiving electrical shocks in the case of electrical leakage, always ground the copier.

- Connect the ground wire to:
  ✻ The ground terminal of the outlet.
  ✻ A grounding contact which complies with the local electrical standards.
- Never connect the ground wire to a gas pipe, the ground wire for a telephone, or a water pipe.

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4 PRECAUTIONS FOR USE

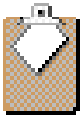
To ensure that the copier is used in an optimum condition, observe the following precautions.

- Never place a heavy object on the copier or subject the copier to shocks.
- Insert the power plug all the way into the outlet.
- Do not attempt to remove any panel or cover which is secured while the copier is making copies.
- Do not turn OFF the Power Switch while the copier is making copies.
- Provide good ventilation when making a large number of copies continuously.
- Never use flammable sprays near the copier.
- If the copier becomes inordinately hot or produces abnormal noise, turn it OFF and unplug it.
- Do not turn ON the Power Switch at the same time when you plug the power cord into the outlet.
- When unplugging the power cord, do not pull on the cord; hold the plug and pull it out.
- Do not bring any magnetized object near the copier.
- Do not place a vase or vessel containing water on the copier.
- Be sure to turn OFF the Power Switch at the end of the workday or upon power failure.
- Use care not to drop paper clips, staples, or other small pieces of metal into the copier.

Operating Environment

The operating environmental requirements of the copier are as follows:

- Temperature: 10°C to 32°C with a fluctuation of 10°C per hour
- Humidity: 15% to 85% RH with a fluctuation of 10% RH per hour



Power Requirements

The power source voltage requirements are as follows:

- Voltage Fluctuation: AC120/230V
  - ±10% (Copying performance assured)
  - +10% -15% (Paper feeding performance assured)
- Frequency Fluctuation: 50/60 Hz ±0.3%

1170SBG0500A

5 HANDLING OF THE CONSUMABLES

Before using any consumable, always read the label on the container carefully.

- Use the right toner. The applicable copier model name is indicated on the toner bottle.
- Paper is easily damaged by dampness. To prevent absorption of moisture, store paper, which has been removed from its wrapper but not loaded into the drawer, in a sealed plastic bag in a cool, dark place.
- Keep consumables out of the reach of children.
- Do not touch the PC Drum with bare hands.
- Store the paper, toner, and other consumables in a place free from direct sunlight and away from any heating apparatus.
- The same sized paper is of two kinds, short grain and long grain. Short grain paper should only be fed through the copier crosswise, long grain paper should only be fed lengthwise.
- If your hands become soiled with toner, wash them with soap and water immediately.
- Do not throw away any used consumables (PC Drum, starter, toner, etc.). They are to be collected.

NOTE

Do not burn, bury in the ground, or throw into the water any consumables (PC Drum, starter, toner, etc.).

1170SBG0600A

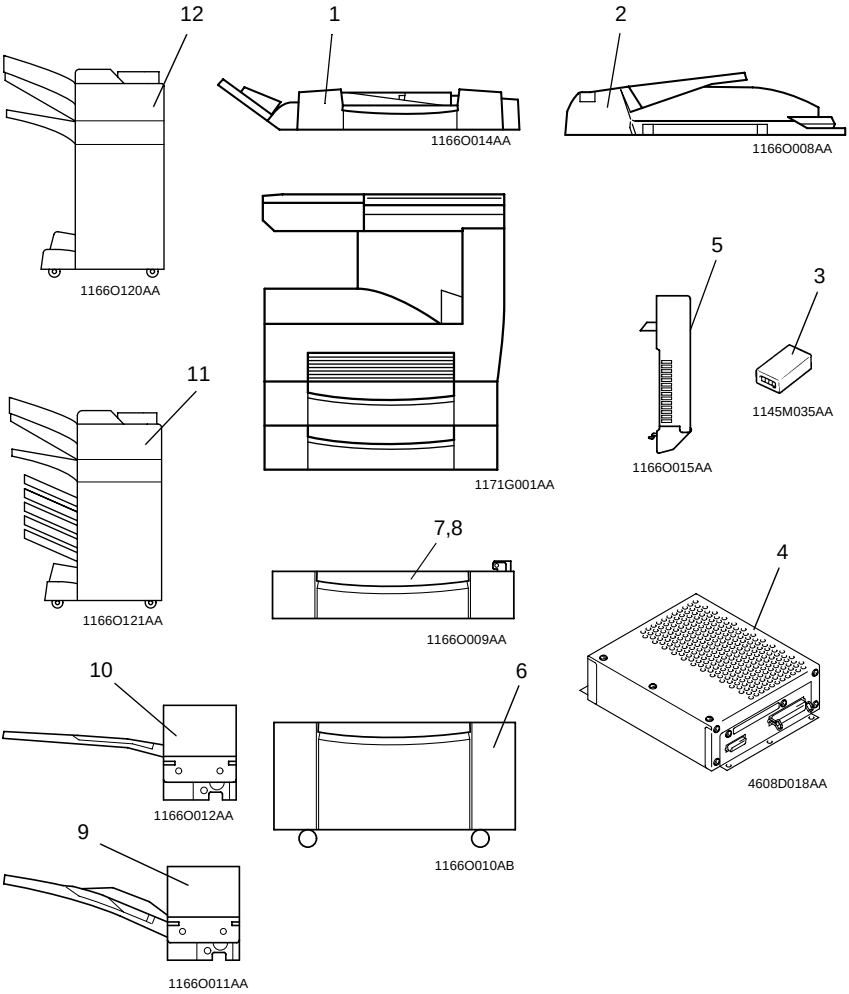
6 OTHER PRECAUTIONS

The Print Head Unit of this copier uses a laser diode that emits a laser beam. Use the following precautions when performing service jobs at the users' premises.

- When a service job needs to be performed in the laser beam path, such as when working around the Print Head Unit and PC Drum, be sure first to turn the copier OFF.
- If the job requires that the power cord be left plugged in, observe the following precautions

1. Take off your watch, ring, and any other reflective object and wear laser protective goggles.
2. At the job site, select a place that is as far as possible away from the users and that is enclosed by walls.
3. Do not bring a highly reflective tool into the laser beam path during the service job.

7 SYSTEM OPTIONS



1. Duplexing Document Feeder (AFR-14)
2. Automatic Document Feeder (AF-6)
3. Plug-In Counter
4. Printer Controller (Pi3500)
5. Duplex Unit (AD-10)
6. Large Capacity Cabinet (PF-106)
7. Paper Feed Unit (PF-108)
8. Paper Feed Unit (PF-110)
9. Shift Tray (OT-100)
10. Job Tray (JS-200)
11. Mailbin Finisher (FN-500)
12. Finisher (FN-100)

Di250

MECHANICAL/ ELECTRICAL

MINOLTA

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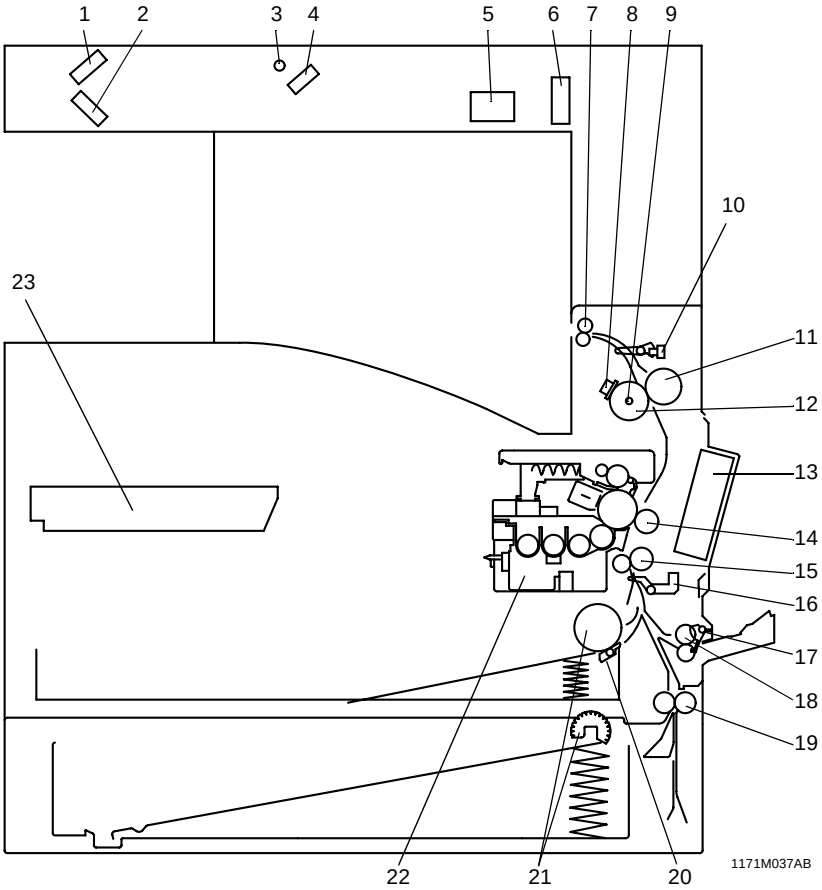
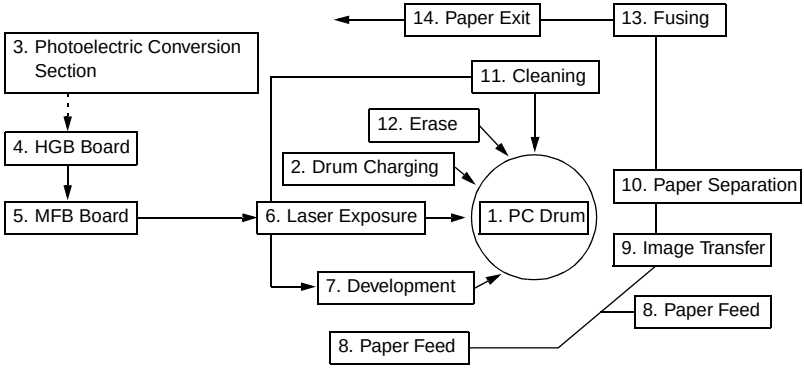
1 CROSS-SECTIONAL VIEW



1. 2nd Mirror
2. 3rd Mirror
3. Exposure Lamp
4. 1st Mirror
5. Lens
6. CCD Unit
7. Paper Exit Roller
8. Fusing Roller Thermostat (TS1)
9. Fusing Roller Heater Lamp (H1)
10. Paper Exit Sensor (PC3)
11. Right Fusing Roller
12. Left Fusing Roller
13. Fusing Cooling Fan Motor (M3)
14. Image Transfer Roller
15. Synchronizing Roller
16. Synchronizing Roller Sensor (PC2)
17. Manual Feed Paper Take-Up Sensor (PC8)
18. Manual Feed Paper Take-Up Roll
19. Vertical Transport Roller
20. Paper Separator Pad
21. Paper Take-Up Roll
22. Imaging Cartridge (I/C)
23. PH Unit

2 COPYING PROCESS



1. PC Drum
- The drum is an aluminum cylinder coated with photosensitive material on which an electrostatic latent image is produced.

2. Drum Charging
- A scorotron charger employing a comb electrode generates a negative DC charged layer on the surface of the PC Drum.

3. Photoelectric Conversion Section
- The Exposure Lamp directs light onto the original. The light reflected off the original is directed and resized by the mirrors and lens so as to produce a reduced-size image on the CCD Sensor.

4. HGB Board
- Converts an electric signal into a corresponding 8-bit digital image signal (A/D conversion), makes various corrections, and outputs the results to the MFB Board.

5. MFB Board
- Compresses the image data received from the HGB Board, stores it, and uncompresses it.

6. Laser Exposure
- The laser beam emitted from the LD (laser diode) strikes the surface of the PC Drum, creating an electrostatic latent image.

7. Development
- Negatively charged toner adheres to the latent image on the PC Drum surface, creating a visible image.

8. Paper Feed
- Feeds sheets of paper from the appropriate paper source.

9. Image Transfer
- An Image Transfer Roller is used. A positive charge applied to the roller causes the visible image on the surface of the PC Drum to transfer onto the front side of the paper.

10. Paper Separation
- The PC Drum Separator Fingers remove paper from the surface of the PC Drum.

11. Cleaning
- The Cleaning Blade scrapes residual toner off the surface of the PC Drum and the toner is recycled back to the Developing Unit.

12. Erase
- The PC Drum is exposed to light, which effectively removes any residual charge from the drum surface.

13. Fusing
- Heat and pressure applied by the Right and Left Fusing Rollers fuse toner on the paper.

14. Paper Exit
- Feeds paper out of the copier.

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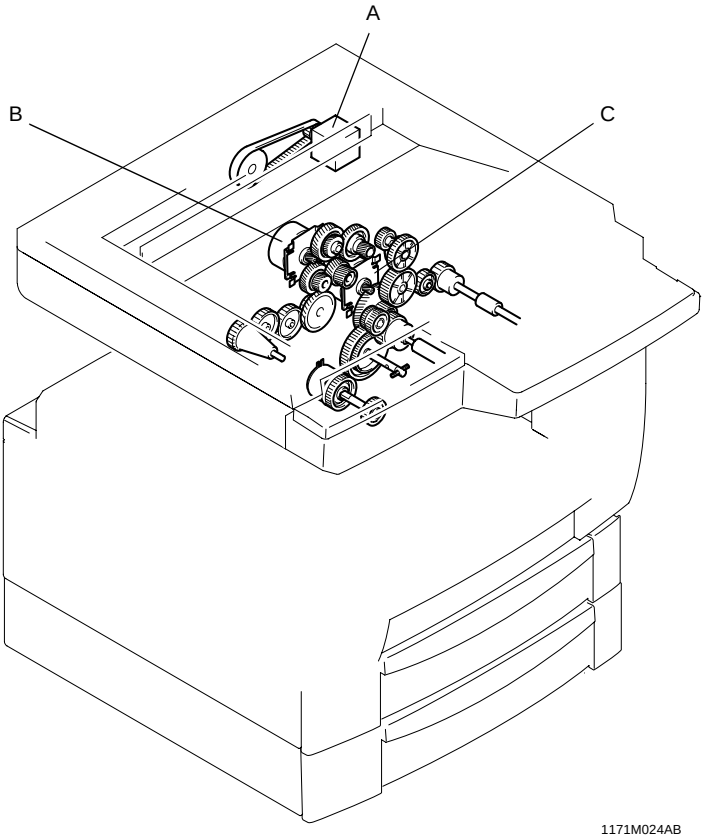
3 DRIVE SYSTEM



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A. Scanner Motor (M5)
   Drives the Scanner and 2nd/3rd Mirrors Carriage.
B. I/C Motor (M1)
   Drives the I/C Unit.
C. Main Motor (M2)
   Drives the Paper Take-Up Roll, Manual Feed Paper Take-Up Roll, Synchronizing Roller, Image Transfer Roller, and Fusing Unit.

4 OPERATING SEQUENCE

A The power cord is plugged into the power outlet.

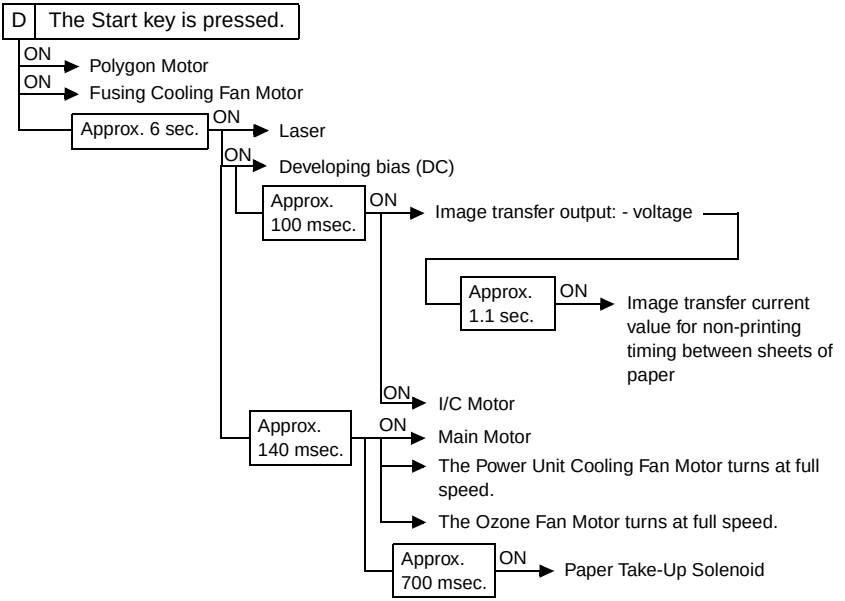
- ON → The Power Supply Unit outputs DC24V for the Dehumidifying Heater (option).

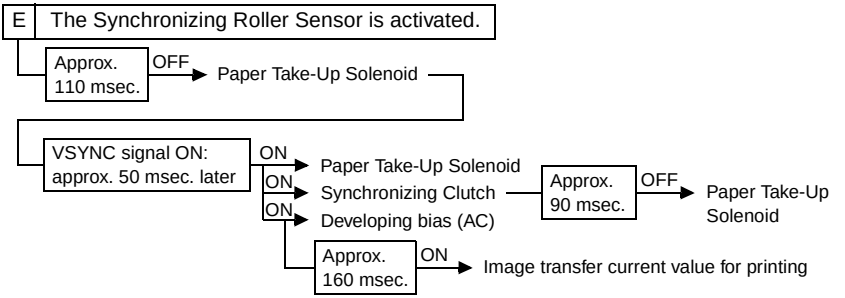
B The Power Switch is turned ON.

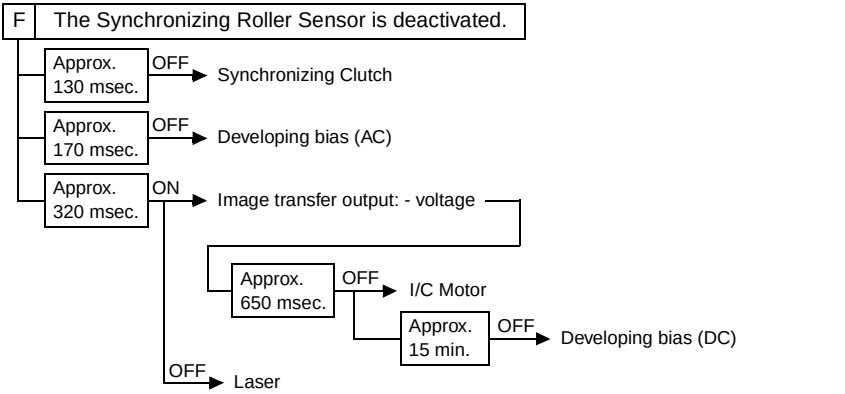
- ON → DC voltage output
- ON → Control panel display
- Approx. 560 msec. → ON → Fusing Roller Heater Lamp

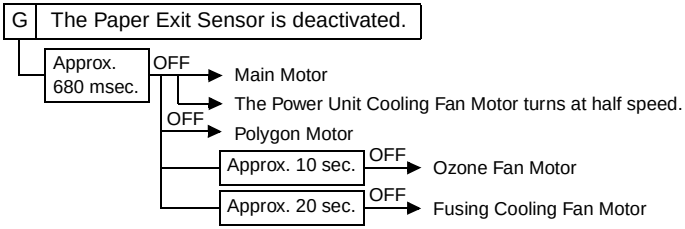
C The warming-up cycle is completed.

- ON → Main Motor → Approx. 20 sec. → OFF → Predrive stops
- ON → Power Unit Cooling Fan Motor turns at full speed. → OFF → Power Unit Cooling Fan Motor turns at half speed.
- ON → Developing bias (DC)
  - Approx. 100 msec. → ON → I/C Motor
  - ON → Image transfer output: - voltage
    - Approx. 700 msec. → ON → Image transfer output: + voltage
    - Approx. 400 msec. → ON → Image transfer output: - voltage
    - Approx. 400 msec. → ON → Image transfer output: + voltage
    - Approx. 400 msec. → ON → Image transfer output: - voltage
    - T/C ratio is checked for abnormality for approx. 28 sec.
    - Normal T/C / Abnormal T/C: approx. 31 sec. → OFF → I/C Motor
    - Approx. 400 msec. → OFF → Image transfer output
    - Approx. 15 min. → OFF → Developing bias (DC)


D The Start key is pressed.
ON
Polygon Motor
ON
Fusing Cooling Fan Motor
Approx. 6 sec.
ON
Laser
ON
Developing bias (DC)
Approx. 100 msec.
ON
Image transfer output: - voltage
Approx. 1.1 sec.
ON
Image transfer current value for non-printing timing between sheets of paper
ON
I/C Motor
Approx. 140 msec.
ON
Main Motor
The Power Unit Cooling Fan Motor turns at full speed.
The Ozone Fan Motor turns at full speed.
Approx. 700 msec.
ON
Paper Take-Up Solenoid


E The Synchronizing Roller Sensor is activated.
Approx. 110 msec.
OFF
Paper Take-Up Solenoid
VSYNC signal ON: approx. 50 msec. later
ON
Paper Take-Up Solenoid
ON
Synchronizing Clutch
Approx. 90 msec.
OFF
Paper Take-Up Solenoid
ON
Developing bias (AC)
Approx. 160 msec.
ON
Image transfer current value for printing


F The Synchronizing Roller Sensor is deactivated.
Approx. 130 msec.
OFF
Synchronizing Clutch
Approx. 170 msec.
OFF
Developing bias (AC)
Approx. 320 msec.
ON
Image transfer output: - voltage
Approx. 650 msec.
OFF
I/C Motor
Approx. 15 min.
OFF
Developing bias (DC)
OFF
Laser


G
The Paper Exit Sensor is deactivated.
Approx. 680 msec.
OFF
Main Motor
The Power Unit Cooling Fan Motor turns at half speed.
OFF
Polygon Motor
Approx. 10 sec.
OFF
Ozone Fan Motor
Approx. 20 sec.
OFF
Fusing Cooling Fan Motor

5 CPU OVERRUN MONITOR FUNCTION

- CPU Overrun Monitor Function (Watchdog Function)
  The watchdog function is a self-monitoring function that determines whether any of the CPUs mounted on the control board overrun.
- If this function detects that a CPU overruns, the copier automatically resets the CPU, thereby restarting the logic circuit and mechanism.
- Even if a copier CPU operates erratically due to electrical noise, therefore, the copier is able to recover from the faulty condition so that the number of visits made by the Tech. Rep. for CPU overrun can be minimized.

- Processing performed during watchdog function:
  If a faulty condition is detected, the copier resets the CPU and performs a restart sequence. Since this sequence of operations is performed even during a copy cycle, the copier detects a sheet or sheets of paper left inside it as a misfeed while it is being restarted.

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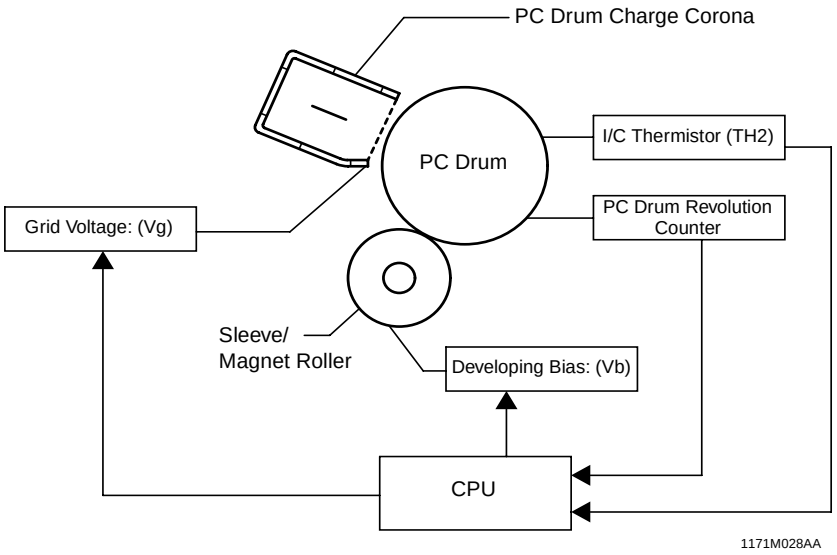
6 IMAGE STABILIZATION SYSTEM

- The following image stabilization controls are provided to ensure stabilized copy image.

Item	Purpose	Control
PC Drum temperature correction	To compensate for any change in ID due to changing PC Drum temperatures.	The I/C Thermistor is used to detect temperature and, according to the detected temperature, Vg/Vb is corrected.
PC Drum deterioration correction	To compensate for degraded sensitivity caused by a deteriorating PC Drum.	Corrects Vg according to the period of time during which the PC Drum has turned.



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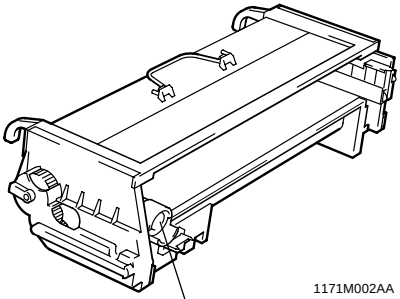
7 IMAGING CARTRIDGE (I/C)

- This copier employs an Imaging Cartridge (“I/C” in this manual) that contains a PC Drum, PC Drum Charge Corona, Developing Unit, and Cleaning Unit as one unit.



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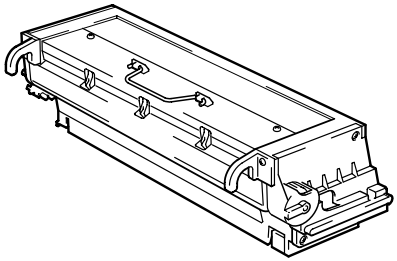

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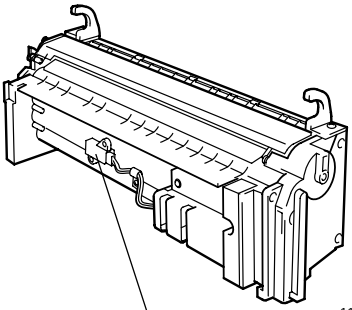

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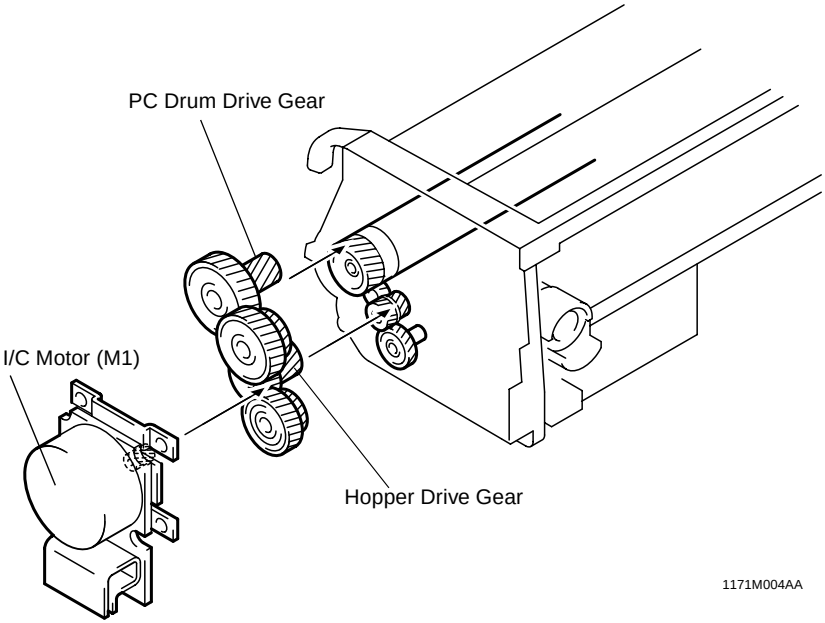
7-1. I/C Drive Mechanism

- Drive from the I/C Motor is transmitted via a gear train to the PC Drum and Hopper.



Electrical Component	Control Signal	ON	OFF
M1	PJ16A-3	L	H

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7-2. Identification and Life of I/C

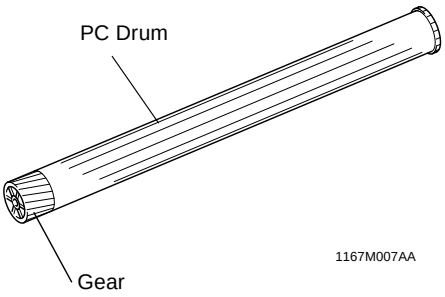
- When the Start key is pressed or the Side Cover is opened and closed, the copier determines whether the I/C is new or one which has been used previously.
- The copier monitors the I/C life by storing in memory the period of time during which the PC Drum has turned. The data is cleared when a new I/C is installed in the copier.

1170SBM0800A

8 PC DRUM

- The PC Drum used in this copier is the organic photoconductor (OPC) type.
  The drum consists of an aluminum base coated with a charge generation layer and a charge transport layer.

Handling Precautions
Prolonged exposure to light can cause the photoconductor surface of the drum to suffer light fatigue, resulting in a loss of photosensitivity. If the I/C is removed from the copier, it should be wrapped in a soft, clean, opaque cloth or other protective covering to prevent exposure to light.



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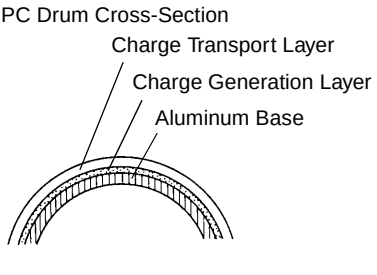
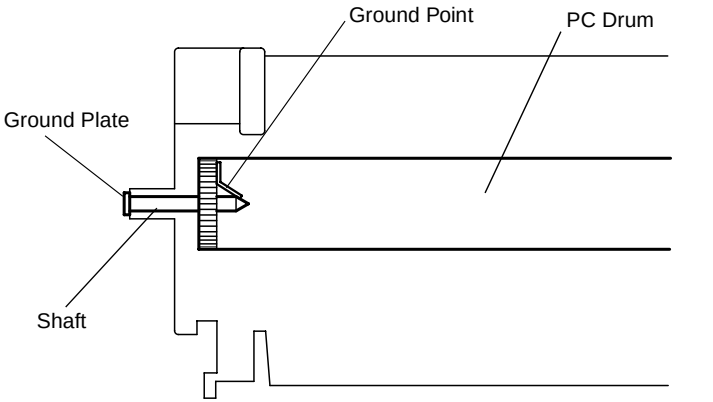


1139M007AA

- Grounding of the PC Drum
  The PC Drum ground point is located inside and at the front end of the I/C as viewed from the front of the copier and in constant contact with the Drum Holding Shaft. When the I/C is installed in the copier, the Drum Holding Shaft contacts the ground point. This provides for assured grounding of the PC Drum through the ground plate in the rear to the frame of the copier.



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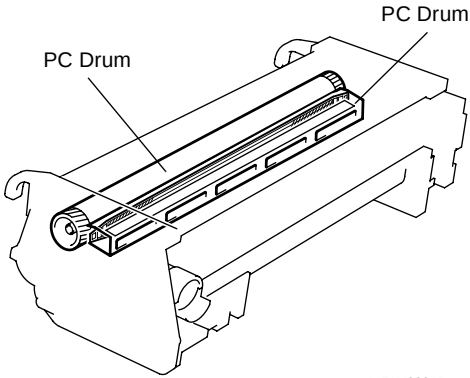
9 DRUM CHARGING

- A scorotron charger system generates a negative DC corona discharge onto the PC Drum surface. The grid mesh ensures uniform charging.
- The grid voltage (Vg) applied to the grid mesh is controlled by the constant voltage circuitry within the High Voltage Unit. It is varied through image stabilization control.
- To restrict ozone production, the copier uses a PC Drum Charge Corona with a comb electrode.



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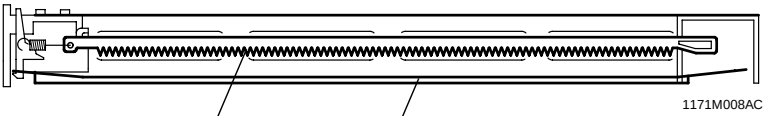

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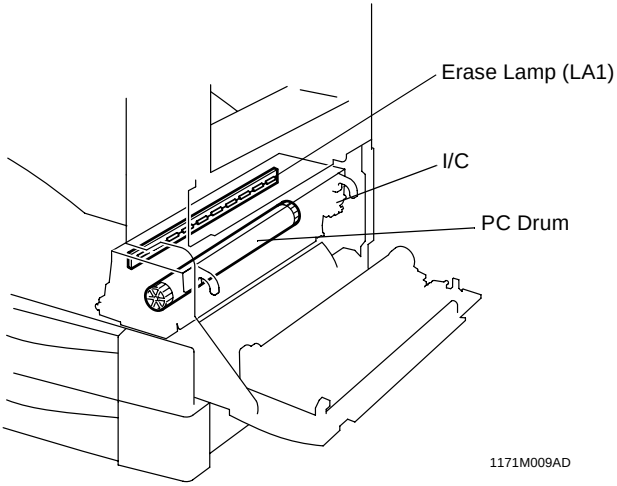
Comb Electrode

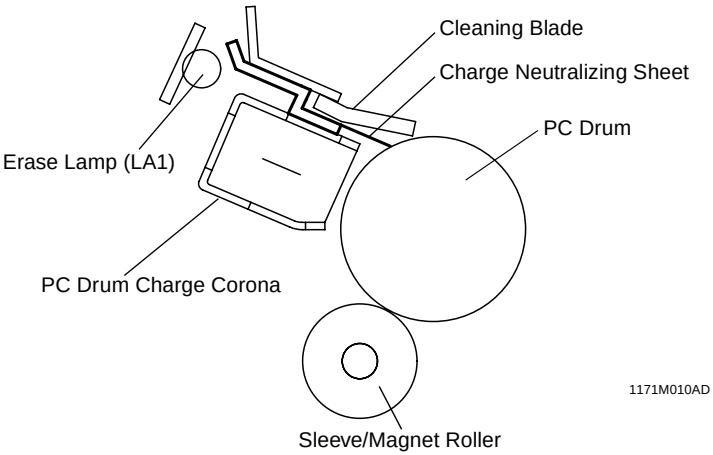
Grid Mesh

Electrical Component	Control Signal	ON	OFF
Drum charging output	PJ14A-3A	L	H

10 ERASE LAMP

- Any potential remaining on the surface of the PC Drum is neutralized by both light from the Erase Lamp and a DC negative voltage applied by the Charge Neutralizing Sheet.
- The Charge Neutralizing Sheet applies a negative charge on the surface of the PC Drum which is positively charged by the Image Transfer Roller. A voltage of -820V is applied to the Charge Neutralizing Sheet from the High Voltage Unit. The Erase Lamp then illuminates the surface of the PC Drum to further neutralize it.
- The Erase Lamp consists of ten tungsten lamps.

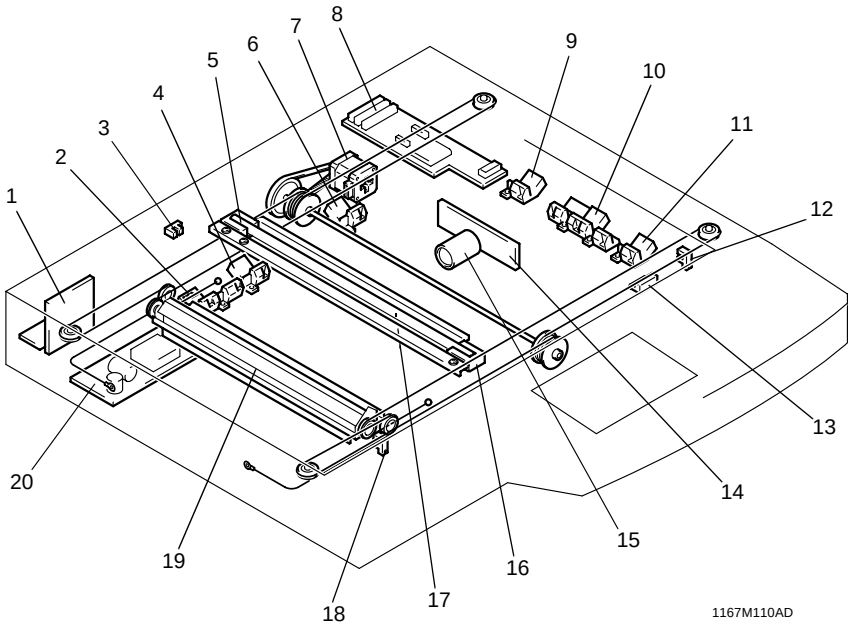




Electrical Component	Control Signal	All lamps ON	Standby ON
LA1	PJ11A-6A	H	L

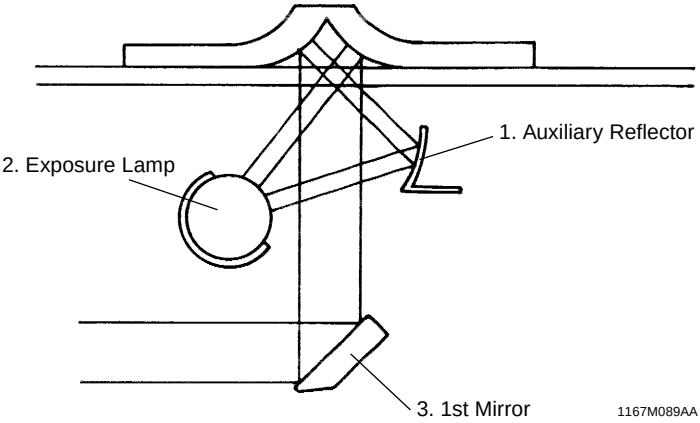
11 IR SECTION

- Light reflected from the original passes through three mirrors and a lens to form a reduced image on the CCD Sensor as the Scanner is moved by the Scanner Motor. The CCD sensor converts the light pattern (image data) into an electrical image signal.
- The electrical image signal is then output to the MFB Board.



1. BCR Board (BCR)
2. Original Size Detecting Sensor 5 (UN8)
3. Original Cover Detecting Sensor (PC14)
4. Original Size Detecting Sensor 4 (UN7)
5. Exposure Lamp (LA2)
6. Original Size Detecting Sensor 6 (UN9)
7. Scanner Motor (M5)
8. HGB Board (HGB)
9. Original Size Detecting Sensor 1 (UN4)
10. Original Size Detecting Sensor 2 (UN5)
11. Original Size Detecting Sensor 3 (UN6)
12. Scanner Home Position Sensor 1 (PC12)
13. Size Reset Switch (S5)
14. CCD Board (CCD)
15. Lens
16. Scanner
17. 1st Mirror
18. Scanner Home Position Sensor 2 (PC13)
19. 2nd/3rd Mirrors Carriage
20. Inverter Board (INV)

11-1. Exposure Section: Construction and Function

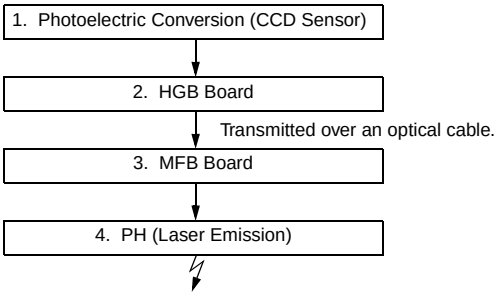


1. Auxiliary Reflector
   When a book or other bound original is copied, the paper in the area near the binding generally fails to come flush against the glass, so that the copy of these areas is generally too dark. The Auxiliary Reflector reduces this problem by reflecting light from the Exposure Lamp onto these areas of the original.
2. Exposure Lamp
   A fluorescent lamp is used to illuminate the original.
3. 1st Mirror
   Directs the reflected light from the original to the 2nd Mirror.

Electrical Component	Control Signal	ON	OFF
LA2	CN13BCR-1	L	H

11-2. Image Processing Flow

- Image processing is made up of the following blocks.



1. Photoelectric Conversion (CCD Sensor)
- Light reflected off the original is received through mirrors and lens by the CCD Sensor which, in turn, outputs the corresponding data to the HGB Board.

2. HGB Board
- After converting the data received from the CCD to an analog signal, the board converts it to 8-bit image data (A/D conversion). It further makes various corrections and outputs the resultant image data to the MFB Board over an optical cable.

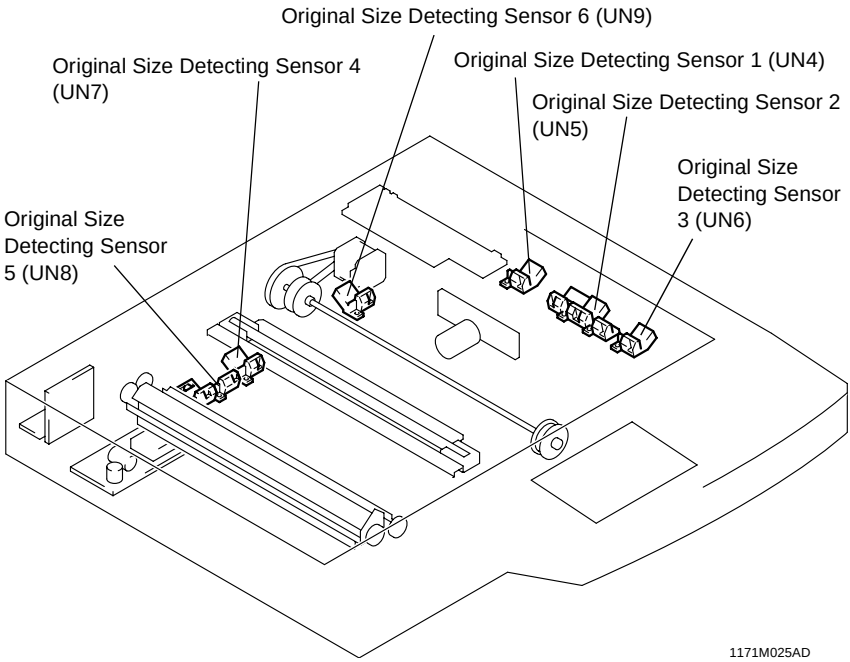
3. MFB Board
- This board compresses the image data received from the HGB Board, stores it, and uncompresses it.
- The image memory has a standard capacity of 16MB and can be expanded up to 64MB (optional).

4. PH
- Emits a laser beam according to the image data provided by the MFB Board to expose the surface of the PC Drum.

1170SBM1103A

11-3. Original Size Detection

- When the copier is in Auto Paper or Auto Size, the sensors mounted in the IR receive light reflected off the original to allow the copier to determine the original size.


Original Size Detecting Sensor 6 (UN9)
Original Size Detecting Sensor 4 (UN7)
Original Size Detecting Sensor 1 (UN4)
Original Size Detecting Sensor 2 (UN5)
Original Size Detecting Sensor 3 (UN6)
Original Size Detecting Sensor 5 (UN8)
1171M025AD

Electrical Component	Control Signal	Blocked	Unblocked
UN4	CN4BCR-4	L	H
UN5	CN5BCR-7	L	H
UN6	CN11HGB-4	L	H
UN7	CN6BCR-4	L	H
UN8	CN9HGB-1	L	H
UN9	CN8BCR-4	L	H

<Original Size Identification: Metric Areas>

Original Size	UN4	UN5			UN6	UN7	UN8		UN9
	S1	S2	S3	S4	S5	S6	S7	S8	S9
11" × 17"	❍	❍	❍	❍		❍	❍	❍	❍
A3L	❍	❍	❍	❍	❍	❍	❍	❍	❍
A4L	❍	❍				❍			❍
A4C	❍	❍	❍	❍	❍				❍
A5L									❍
B4L	❍	❍	❍			❍	❍	❍	❍
FLS	❍	❍				❍	❍		❍
Letter L	❍	❍							❍
Letter C	❍	❍	❍	❍					❍
Legal	❍	❍				❍	❍	❍	❍

❍: Detected by sensor; L: Lengthwise; C: Crosswise

NOTE
UN4, UN6 and UN8 are options.

<Original Size Identification: Inch Areas>

Original Size	UN5			UN6	UN7	UN8		UN9
	S2	S3	S4	S5	S6	S7	S8	S9
11" × 17"	❍	❍	❍		❍	❍	❍	❍
A3L	❍	❍	❍	❍	❍	❍	❍	❍
A4L	❍				❍			❍
A4C	❍	❍	❍	❍				❍
B4L	❍	❍			❍	❍	❍	❍
5-1/2" × 8-1/2"L								❍
FLS	❍				❍	❍		❍
B5C	❍	❍						❍
Letter L	❍							❍
Letter C	❍	❍	❍					❍
Legal	❍				❍	❍	❍	❍

❍: Detected by sensor; L: Lengthwise; C: Crosswise

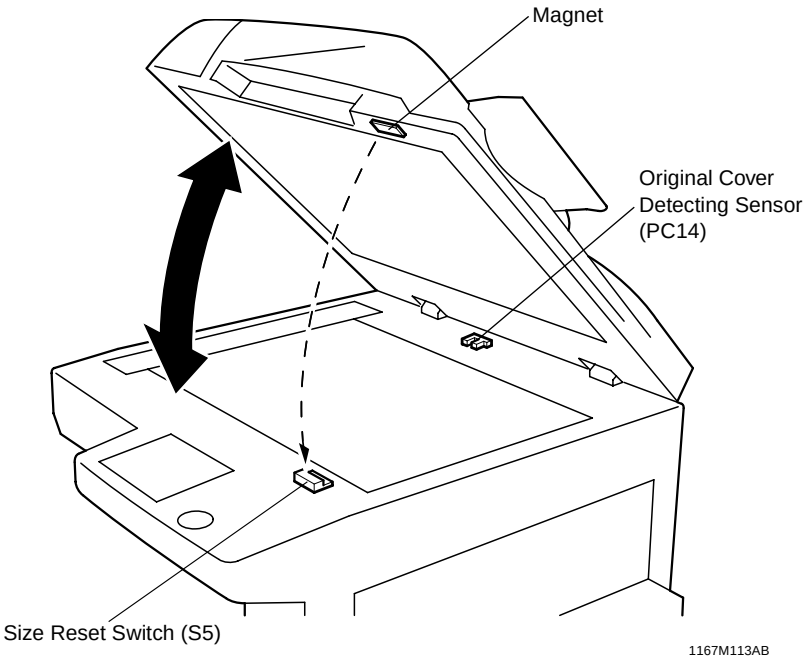
NOTE
UN6, UN8 and UN9 are options.

1170SBM1104A

11-4. Original Size Detection Timing

The copier CPU affirms and resets the readings of the original size at the following timings.

- Takes size readings:
  When the Original Cover Detecting Sensor is deactivated.
- Affirms size readings:
  When the Start key is pressed with the Original Cover Detecting Sensor activated or the Size Reset Switch deactuated.
- Resets size readings:
  When the Size Reset Switch is deactuated.



Electrical Component	Control Signal	ON	OFF
S5	CN9BCR-2	L	H

Electrical Component	Control Signal	Unblocked	Blocked
PC14	CN10BCR-2	L	H

1170SBM1105A

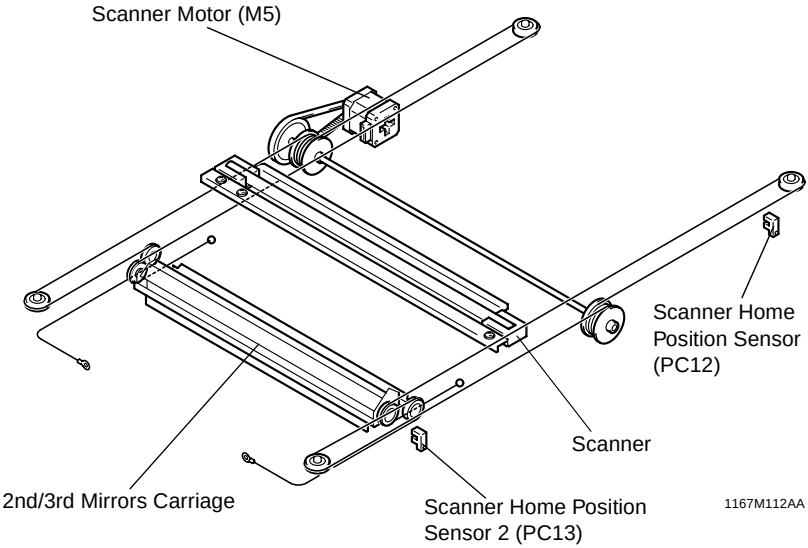
11-5. Scanner and 2nd/3rd Mirrors Carriage Moving Mechanism

<Scanner>

- During a scan, the Scanner projects an even amount of light from the Exposure Lamp onto the entire surface of the original. The light is reflected from the original to the 1st Mirror of the scanner and then to the 2nd and 3rd Mirrors.
- The Scanner is driven by the Scanner Motor and front and rear Scanner Drive Cables.
- Scanner speed is determined by the set zoom ratio in reference to the full size mode.
- The Scanner is at home position when Scanner Home Position Sensor 1 is blocked. This position serves as the reference for the scan motion.
- Scanner Home Position Sensor 2 determines the home position of the Scanner when AF-7 is used.

<2nd/3rd Mirrors Carriage>

- The 2nd and 3rd Mirrors are mounted to their holder at right angles to each other. They direct the light reflected off the 1st Mirror through the lens to the CCD.
- The 2nd/3rd Mirrors Carriage is also moved by the Scanner Drive Cables and pulleys driven by the Scanner Motor. It travels at a speed half that of the Scanner, thereby keeping constant the optical path length between the Original Glass and lens.

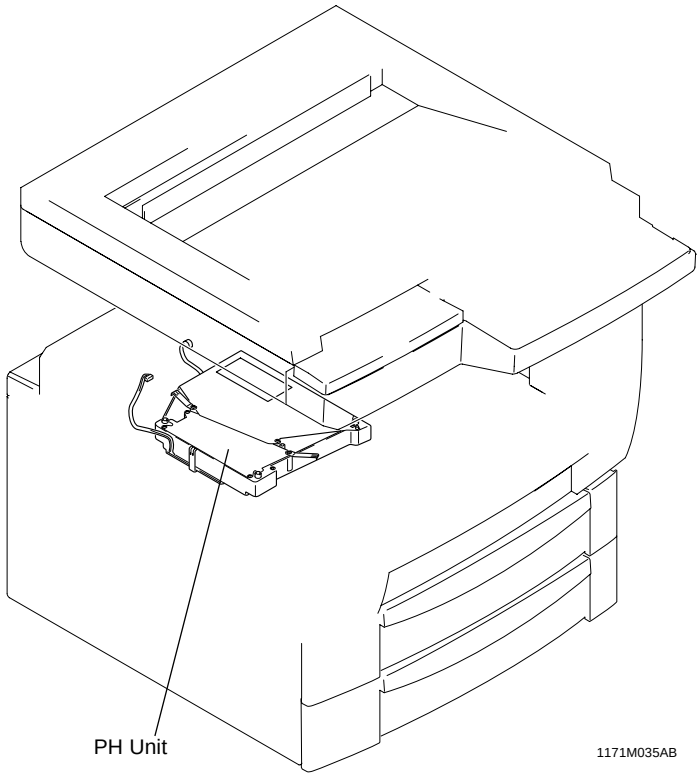


Electrical Component	Control Signal	Forward Rotation	Backward Rotation
M5	CN3BCR-1~3	Pulse output	

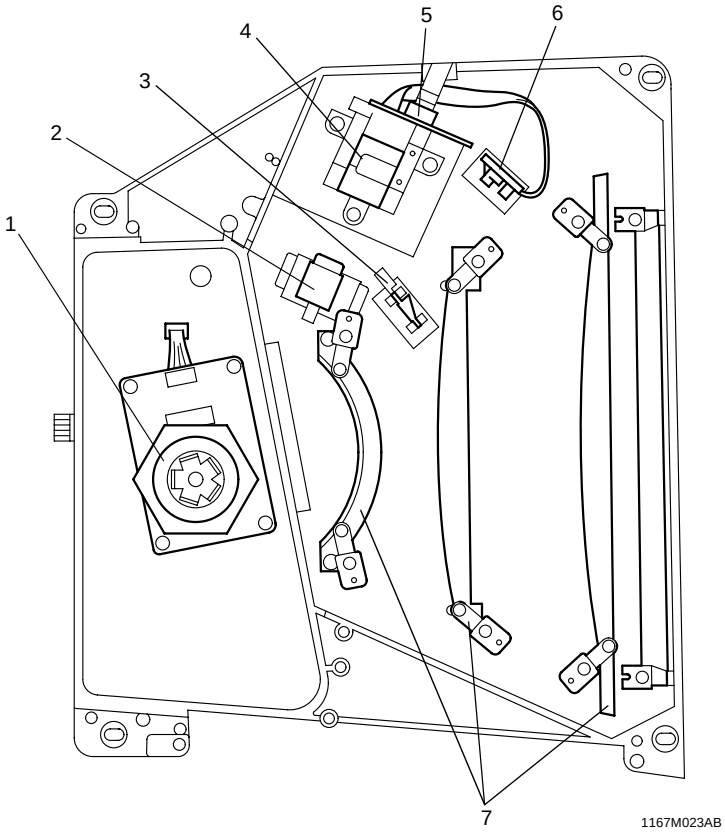
Electrical Component	Control Signal	Blocked	Unblocked
PC12	CN11BCR-1	L	H
PC13	CN12BCR-1	L	H

12 PH SECTION

- Based on the image data output from the MFB Board, the LD (laser diode) is activated and the corresponding light strikes the surface of the PC Drum.



12-1. PH Components

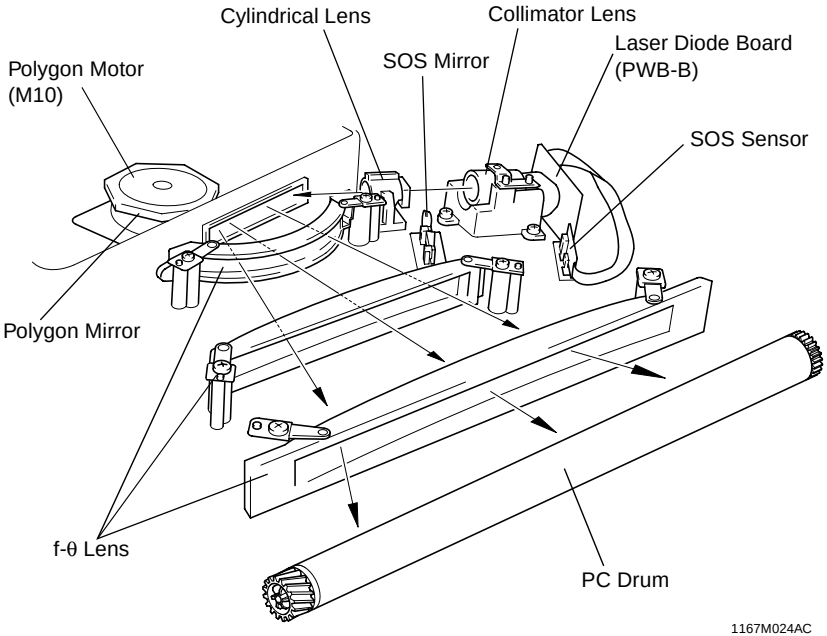


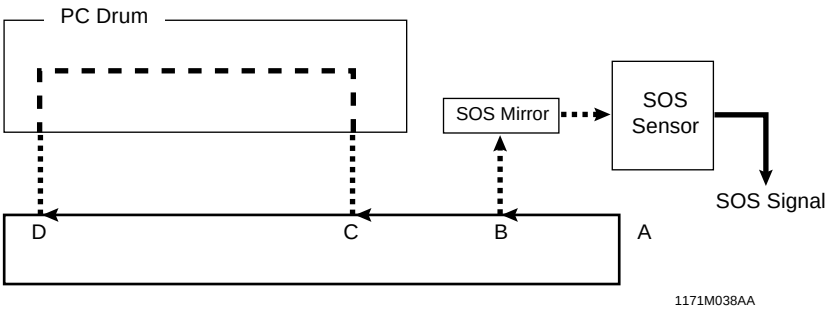
1. Polygon Motor (M10)
2. Cylindrical Lens
3. SOS Mirror
4. Collimator Lens
5. Laser Diode Board (PWB-B)
6. SOS Sensor
7. f-θ Lens

Electrical Component	Control Signal	ON	OFF
M10	PJ8A-3	L	H

12-2. Laser Emission Timing (SOS Signal)

- The signal output from the Master Board triggers the firing of the laser. The laser beam travels to the Polygon Mirror, lens, and SOS Mirror to eventually hit the SOS Sensor, which generates an SOS signal.
- The SOS signal determines the laser emission timing for each line in the main scanning direction.

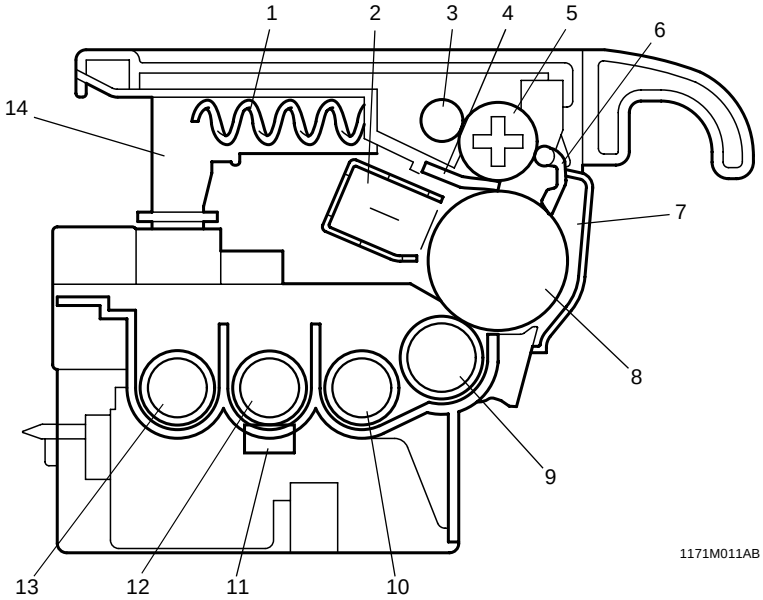




A to B: LD activation
B to C: LD OFF
C to D: Laser beam exposure area according to the image data

13 DEVELOPING UNIT

- The Toner Conveying Rollers mix the toner and carrier particles together and carry the toner/carrier mixture up to the Sleeve/Magnet Roller. The magnetic brush formed on the surface of the roller allows the toner to come into contact with the charges on the surface of the PC Drum, thus forming an electrostatic latent image.



1. Spent Toner Recycling Coil
2. PC Drum Charge Corona
3. Spent Toner Feed Roller 2
4. Cleaning Blade
5. Spent Toner Feed Roller 1
6. PC Drum Paper Separator Finger
7. PC Drum Protective Shutter
8. PC Drum
9. Sleeve/Magnet Roller
10. 1st Toner Conveying Roller
11. ATDC Sensor (E1)
12. 2nd Toner Conveying Roller
13. 3rd Toner Conveying Roller
14. Spent Toner Recycling Duct

13-1. Sleeve/Magnet Roller

- This copier employs the MT-HG system with a Sleeve/Magnet Roller having the following magnetic characteristics.
- Turning of the sleeve surrounding the Magnet Roller ensures that fresh developer from the Developer Mixing Chamber is always being conveyed to the point of development with respect to the PC Drum.

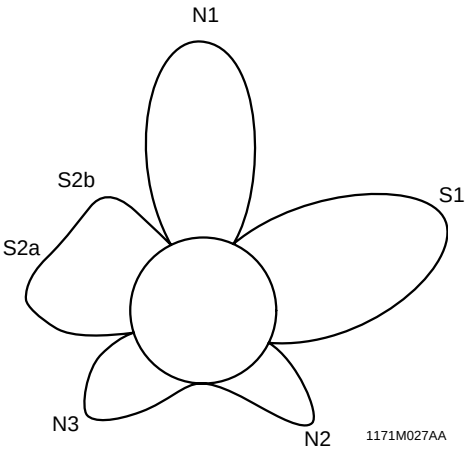
N1 : The point of development with the maximum magnetic flux density which ensures that the carrier is firmly held onto the Sleeve Roller when toner is attracted to the latent image.

S1, N2 : The magnetic flux density between these two poles is made low to ensure that the developer remaining on the surface of the Sleeve Roller is smoothly recycled. They also prevent developer from scattering.

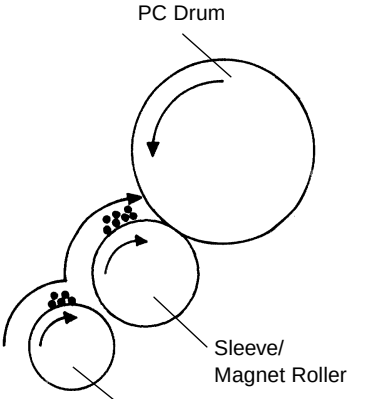
N3 : The developer brush is formed by this pole and its height is moderated before the brush is regulated by the Doctor Blade.

S2a : This pole ensures that the developer is conveyed to the point of development over the wide interval between N3 and N1.

S2b : If developer is compacted and clogs at the Doctor Blade and, as a result, part of the surface of the Sleeve/Magnet Roller is not covered with developer, the nearby developer around this pole with a weak magnetic force goes to those uncovered areas. This helps prevent white lines from occurring on the copy.



1171M027AA

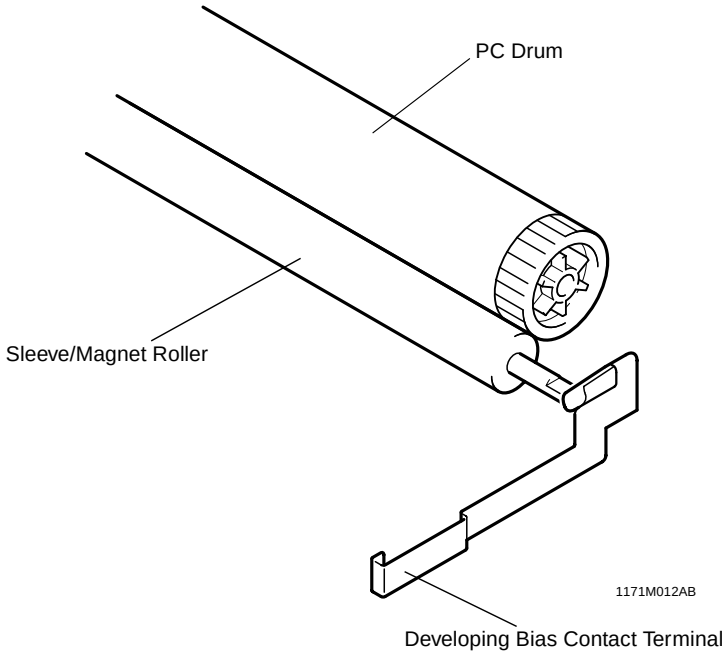


1167M076AB

1170SBM1302A

13-2. Developing Bias

- The amount of toner attracted onto the surface of the PC Drum is controlled by varying the developing bias voltage.
- As the PC Drum deteriorates and its photoconductive layer begins to wear, it becomes more sensitive to the increase in the amount of toner. As a countermeasure against this problem, the developing bias voltage is automatically switched according to the PC Drum temperature, thereby stabilizing the image quality level.



Electrical Component	Control Signal	ON	OFF
Vb	PJ14A-1A	L	H

13-3. ATDC Sensor

- The ATDC Sensor automatic adjustment is made when a new I/C is installed in the copier. Toner replenishing control is thereafter controlled as detailed in the following.

1. ATDC Sensor Automatic Adjustment

- The ATDC Sensor is automatically adjusted when a new I/C is loaded in the copier. During this sequence, the copier reads the sensor output value and sets it as the reference. This reference value is stored in memory and used until the I/C reaches its service life.

2. Toner Replenishing Control

- While the I/C Motor is turning, the ATDC Sensor samples T/C and, according to the readings, the copier provides the following controls.

T/C Ratio (%)	Sampling Data (V)	Control Details
More than 19	Less than 1.41	Defective ATDC Sensor
14 to 19	2.32 to 1.41	Toner replenished for 0 msec.
13 to 14	2.50 to 2.32	Toner replenished for 54 msec. at intervals of approx. 1 sec.
12 to 13	2.68 to 2.50	Toner replenished for 150 msec. at intervals of approx. 1 sec.
10 to 12	3.10 to 2.68	Toner replenished for 378 msec. at intervals of approx. 500 msec.
7 to 10	3.92 to 3.10	Passed onto the T/C recovery mode.
Less than 7	More than 3.92	Defective ATDC Sensor

✻ Toner replenishment represents the operation of the Sub Hopper Toner Replenishing Motor.

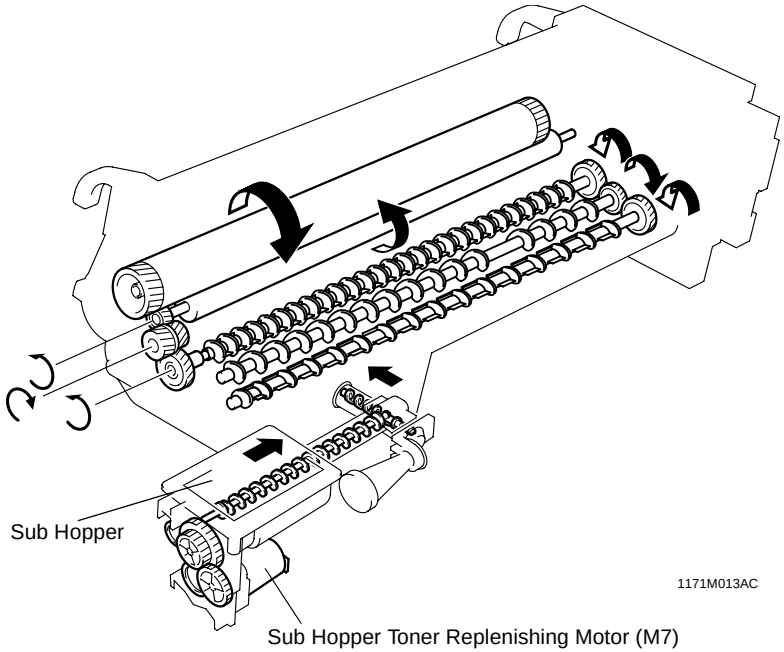
3. Toner Empty Control (T/C Recovery Mode)

- When the control is passed onto the T/C recovery mode, the Sub Hopper Toner Replenishing Motor is energized to replenish the supply of toner into the Developing Unit and, if T/C is recovered to a level of 14% or higher (2.32V or less) within 150 sec., it resets the toner-empty condition.

1170SBM1304A

13-4. Sub Hopper Toner Replenishing Mechanism

- Toner is replenished from the Sub Hopper to the Developing Unit by turning the Sub Hopper Toner Replenishing Motor for the period of time controlled by the ATDC output voltage (T/C).

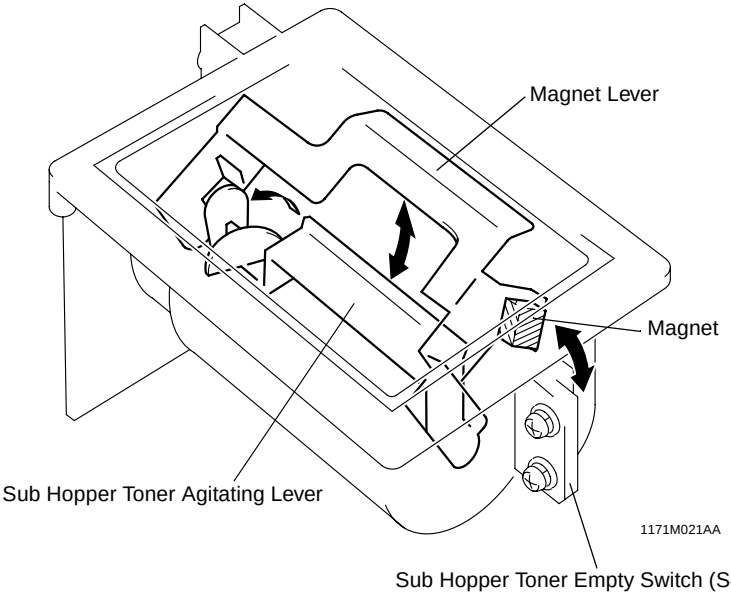


Electrical Component	Control Signal	ON	OFF
M7	PJ11A-8A	DC24V	L

1170SBM1305A

13-5. Sub Hopper Toner Empty Detecting Mechanism

- A toner-empty condition in the Sub Hopper is detected by the Magnet Lever that moves up and down as the Sub Hopper Toner Agitating Lever turns and actuates and deactuates the Sub Hopper Toner Empty Switch.
- While the amount of toner in the Sub Hopper is more than the predetermined amount, the Magnet Lever rests on the toner, keeping the Sub Hopper Toner Empty Switch deactuated even when the Sub Hopper Toner Agitating Lever turns. As toner is consumed, the Magnet Lever lowers to eventually actuate the Sub Hopper Toner Empty Switch, at which timing the copier detects a toner-empty condition in the Sub Hopper.

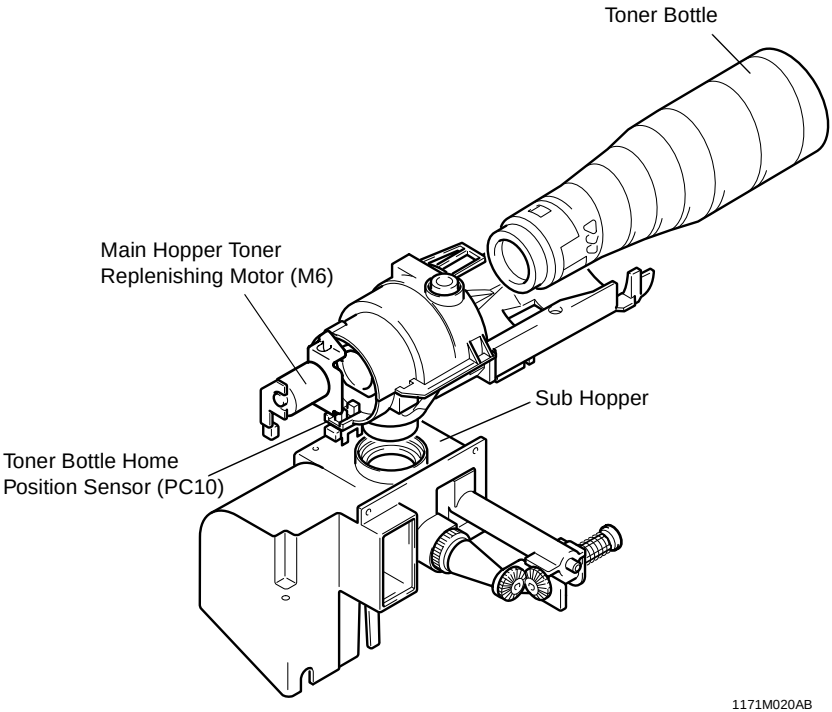


Electrical Component	Control Signal	ON	OFF
S4	PJ11A-7B	L	H

1170SBM1306A

13-6. Main Hopper Toner Replenishing Mechanism

- When a toner-empty condition in the Sub Hopper is detected, the Main Hopper Toner Replenishing Motor is energized to turn the Toner Bottle, thereby supplying toner from the Main Hopper to the Sub Hopper.
- The Toner Bottle Home Position Sensor mounted on the coupling ensures that the Toner Supply Port in the Toner Bottle is positioned at the top whenever the bottle is stopped.
- The Toner Bottle Cover Sensor detects whether the Toner Bottle Cover is open. If the cover is open, the copier does not authorize the initiation of a new copy cycle. If the cover is opened during a copy cycle, the copier interrupts the cycle.



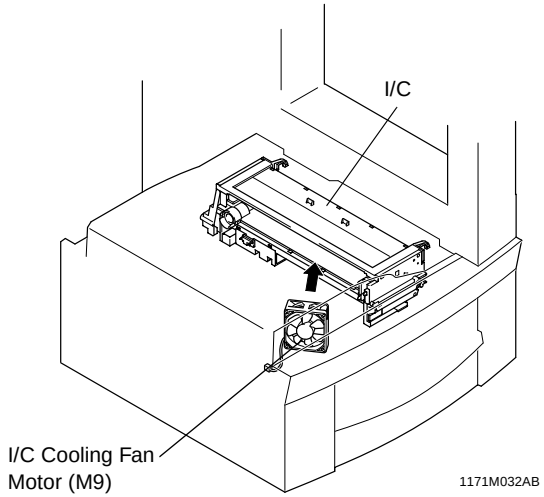
Electrical Component	Control Signal	ON	OFF
M6	PJ11A-4A	DC24V	L

Electrical Component	Control Signal	Unblocked	Blocked
PC10	PJ11A-2B	L	H

1170SBM1307A

13-7. I/C Cooling Fan Motor

- The I/C Cooling Fan Motor prevents the temperature inside the copier (around the entire I/C) from rising inordinately.

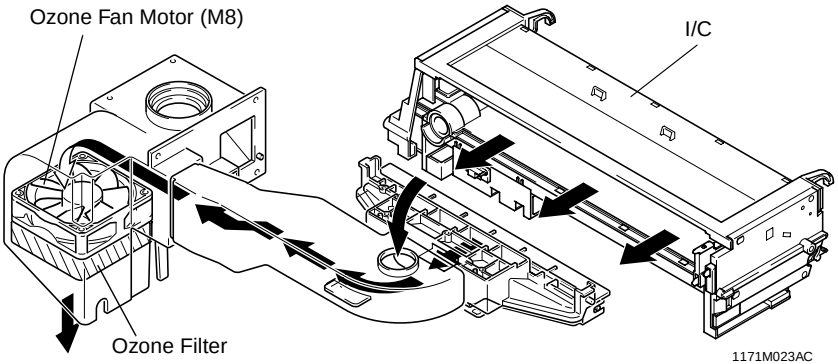


Electrical Component	Control Signal	ON	OFF
M9	PJ18A-10	DC24V	L

1170SBM1308A

13-8. Ozone Fan Motor

- Ozone produced by the PC Drum Charge Corona is absorbed by the Ozone Filter from the air being drawn out of the copier by the Ozone Fan Motor.



Electrical Component	Control Signal	ON	OFF
M8	PJ11A-1A	DC24V	L

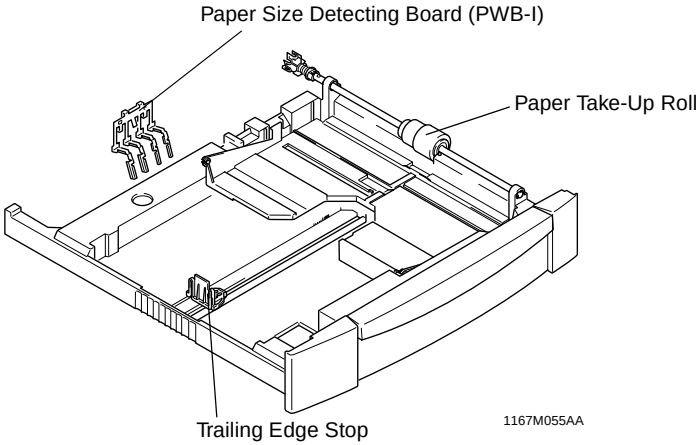
1170SBM1400A

14 PAPER TAKE-UP/FEED SECTION

NOTE

- For the details of the 2nd Cassette (500-Sheet Cassette), see the relevant option service manual.

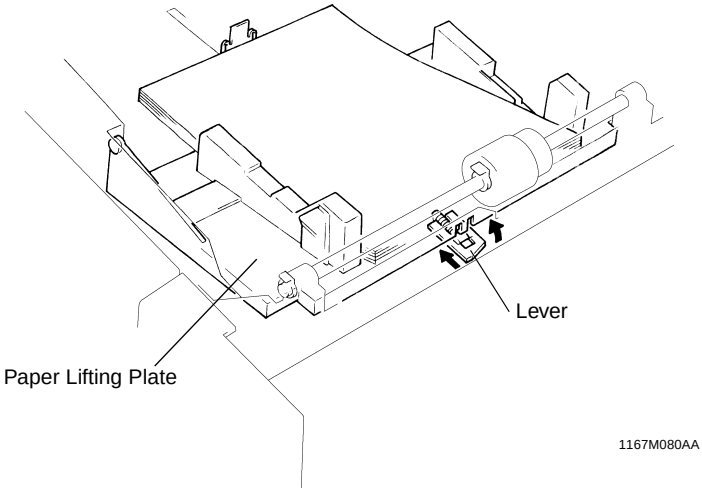
- This copier employs the Multi-Purpose (MP) Cassette whose capacity is about 250 sheets (about 20 sheets for special paper).



1170SBM1401A

14-1. MP Cassette Paper Lifting Plate

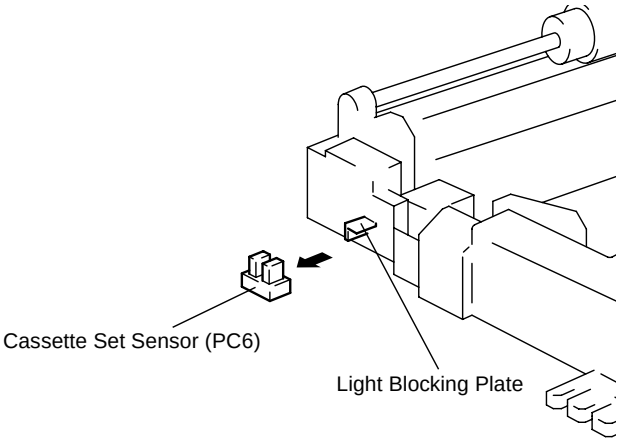
- The Paper Lifting Plate installed in the MP Cassette is spring-loaded to push the paper stack upward. When the cassette is slid into the copier, the lever located on the bottom of the cassette and used to lock down the Paper Lifting Plate is pushed and unlocked, allowing the Paper Lifting Plate to push the paper stack upward.



1170SBM1402A

14-2. MP Cassette-in-Position Detection

- When the MP Cassette is slid into the copier, the light blocking plate located in the rear of the cassette blocks the Cassette Set Sensor and the copier determines that the MP Cassette has been slid into position.



1167M052AB

Electrical Component	Control Signal	Unblocked	Blocked
PC6	PJ13A-5B	H	L

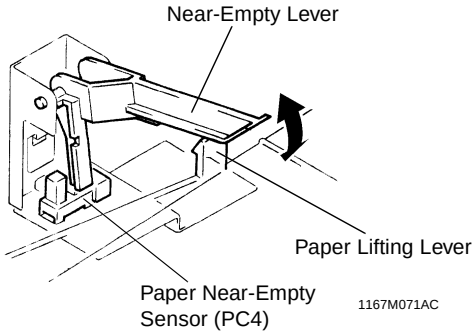
1170SBM1403A

14-3. MP Cassette Paper Empty Detection

- Two sensors are used in this copier: the Paper Empty Sensor detects a paper-empty condition, while the Paper Near-Empty Sensor detects a paper near-empty condition.

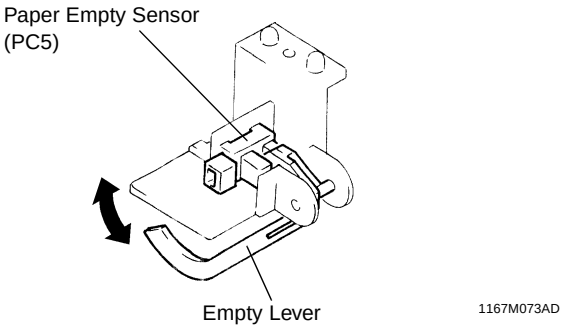
Paper Near-Empty Detection:

- A paper near-empty condition is detected as the paper is consumed and when the Near-Empty Lever lowers to eventually block the sensor (L).
- At this time, the MP Cassette Paper Empty LED starts blinking.
- A paper-empty condition results when about 50 more sheets of paper are used after the near-empty condition has been detected.



Paper Empty Detection:

- A paper-empty condition is detected as the paper is consumed and when the Empty Lever lowers to eventually block the sensor (L).
- At this time, the MP Cassette Paper Empty LED lights up steadily.

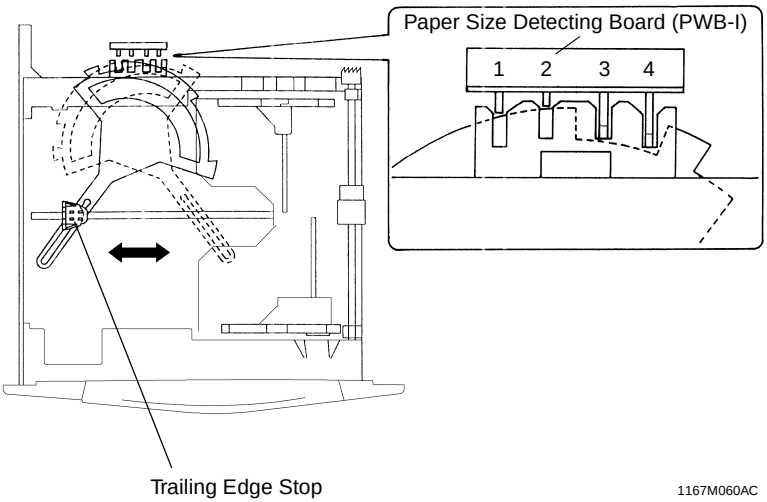


Electrical Component	Control Signal	Unblocked	Blocked
PC4	PJ14A-13A	H	L
PC5	PJ13A-2B	H	L

14-4. MP Cassette Paper Size Detection

- The Paper Size Detecting Board detects the length of the paper (FD).
- A lever is connected to the Trailing Edge Stop of the cassette and, as the stop is slid to the size of the paper loaded in the cassette, the lever is moved to turn ON and OFF the size detecting switches mounted on the copier side.
- The control panel settings are necessary for any paper size other than the following.

Paper Size Detecting Switches (PWB-I)				Paper Size
1	2	3	4	
ON	OFF	OFF	OFF	A3L, 11”×17”L
OFF	OFF	OFF	OFF	B4L, 8-1/2”×14”L
OFF	ON	ON	ON	A4L
ON	ON	ON	ON	B5L, 8-1/2”×11”L
ON	ON	OFF	OFF	A4C/A5L
ON	OFF	OFF	ON	B5C
OFF	ON	OFF	OFF	A5C
ON	ON	ON	OFF	8-1/2”×11”C

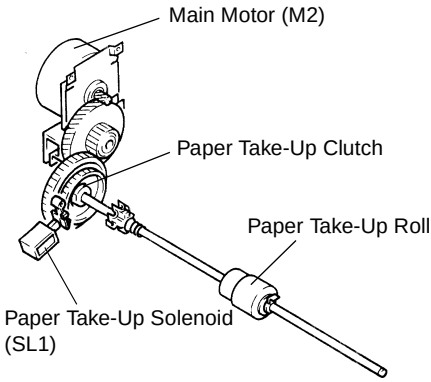


Electrical Component	Control Signal	ON	OFF
PWB-I (1)	PJ14A-1B	L	H
PWB-I (2)	PJ14A-2B	L	H
PWB-I (3)	PJ14A-3B	L	H
PWB-I (4)	PJ14A-4B	L	H

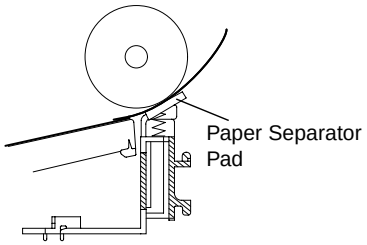
1170SBM1405A

14-5. Paper Take-Up Mechanism

- Drive from the Main Motor is transmitted to the Paper Take-Up Clutch (spring clutch) and, by energizing the Paper Take-Up Solenoid, the Paper Take-Up Roll is turned.
- The paper separating mechanism employs a Paper Separator Pad.



1167M038AB



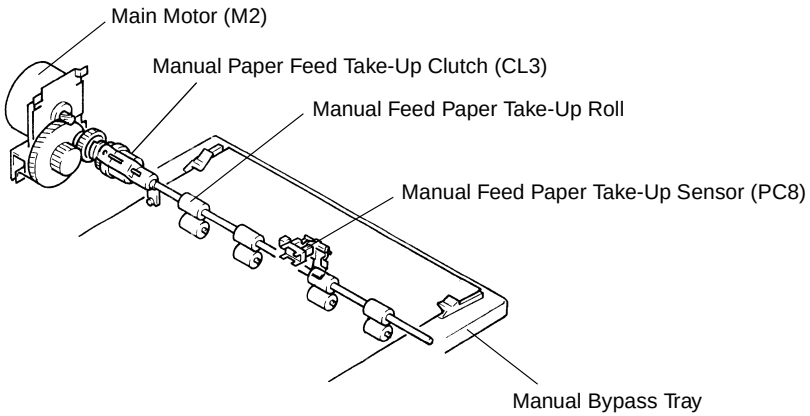
1167M054AB

1170SBM1406A

14-6. Manual Bypass Tray

1. Construction of the Manual Bypass Tray

- Drive from the Main Motor is transmitted to the Manual Paper Feed Take-Up Clutch and, by energizing this clutch, the Manual Feed Paper Take-Up Roll is turned.


Main Motor (M2)
Manual Paper Feed Take-Up Clutch (CL3)
Manual Feed Paper Take-Up Roll
Manual Feed Paper Take-Up Sensor (PC8)
Manual Bypass Tray

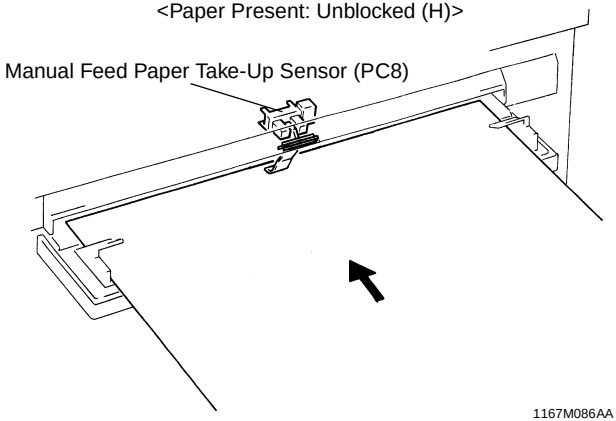
1167M067AC

Electrical Component	Control Signal	ON	OFF
M2	PJ16A-1	L	H
SL1	PJ13A-13B	L	H
CL3	PJ4A-9A	L	H

2. Manual Feed Paper Take-Up Detection

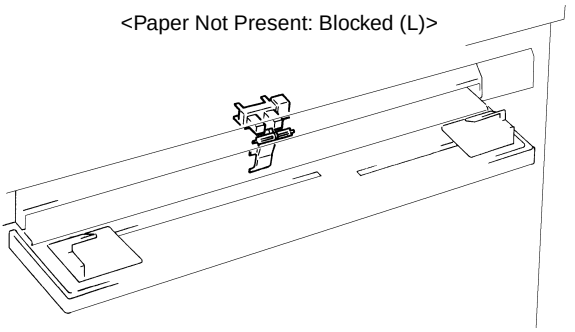
- The Manual Feed Paper Take-Up Sensor detects a sheet of paper that is fed via the Manual Bypass Tray.
- The size and type of the paper for manual feed are set on the control panel.

<Paper Present: Unblocked (H)>



1167M086AA

<Paper Not Present: Blocked (L)>



1167M085AA

Electrical Component	Control Signal	Unblocked	Blocked
PC8	PJ4A-7B	H	L

1170SBM1407A

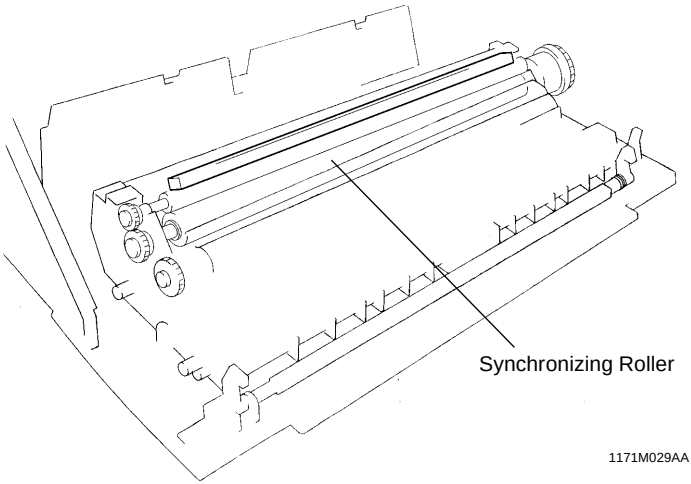
14-7. Paper Take-Up Retry Mechanism

- To minimize the occurrence of a paper misfeed due to a slippery Paper Take-Up Roll, the Paper Take-Up Solenoid is energized a second time if a sheet of paper fails to reach the Synchronizing Roller Sensor within a given period of time after the solenoid has been energized first.
- A paper take-up misfeed results if the sheet of paper does not reach the Synchronizing Roller Sensor even after two paper take-up sequences.

1170SBM1500A

15 SYNCHRONIZING ROLLERS

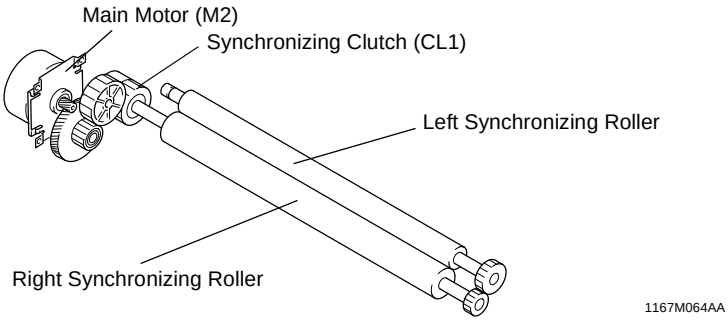
- The Synchronizing Rollers of this copier are located inside the Right Door. They are easily accessible for misfeed clearing by just opening the Right Door.



1170SBM1501A

15-1. Synchronizing Roller Drive Mechanism/Control

- The Synchronizing Rollers are turned by the drive from the Main Motor transmitted to the Synchronizing Clutch.
- The rollers are started when the Synchronizing Clutch is deenergized.

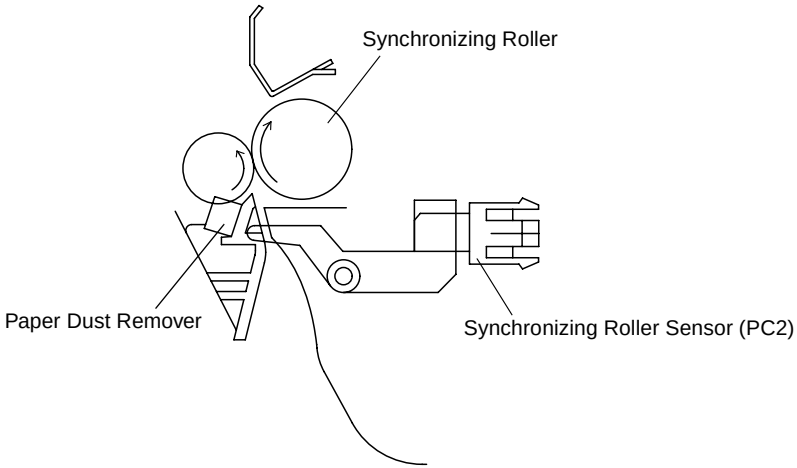


Electrical Component	Control Signal	ON	OFF
M2	PJ16A-1	L	H
CL1	PJ13A-2A	L	H

1170SBM1502A

15-2. Paper Dust Remover

- The Paper Dust Remover is installed so that it makes contact with the Left Synchronizing Roller. It is intended for preventing paper dust from sticking to the surface of the PC Drum.
- As the roller turns in contact with the Paper Dust Remover, triboelectric charging occurs, which attracts paper dust from the paper that passes between the two rollers and the dust is, in turn, transferred onto the Paper Dust Remover.



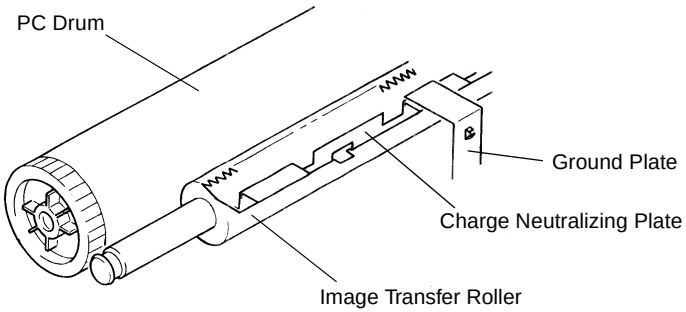
16 IMAGE TRANSFER AND PAPER SEPARATION

Image Transfer

- This copier employs an Image Transfer Roller to transfer the image to the paper. The High Voltage Unit applies an image transfer current to this roller. To ensure that image transfer efficiency is stabilized, the image transfer current is automatically varied according to the paper size, paper type, and the B/W ratio of the original.
- To prevent toner from sticking to the Image Transfer Roller, an image transfer voltage of -975V is applied to the roller for cleaning.

Paper Separation

- To neutralize any charge left on the paper, to which the image has been transferred, the High Voltage Unit applies a voltage of -1200V via a ground plate to the Charge Neutralizing Plate.

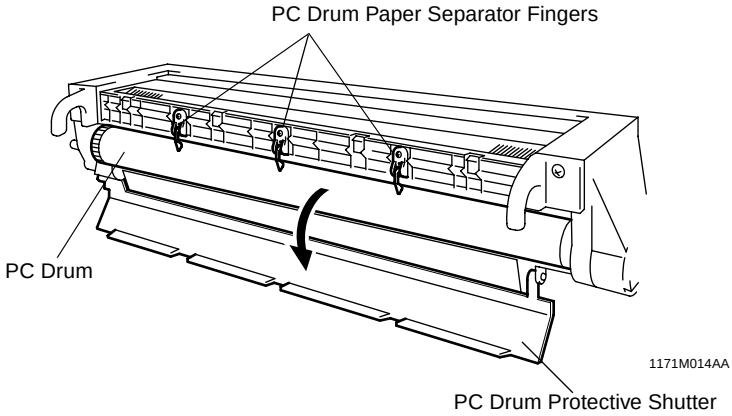


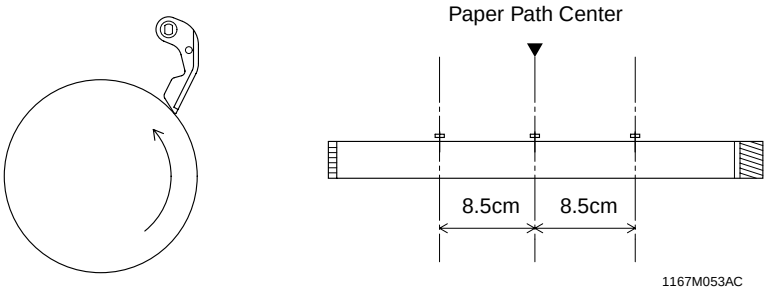
1167M082AA

Electrical Component	Control Signal	ON	OFF
Image transfer output	PJ14A-2A	L	H

17 PC DRUM PAPER SEPARATOR FINGERS

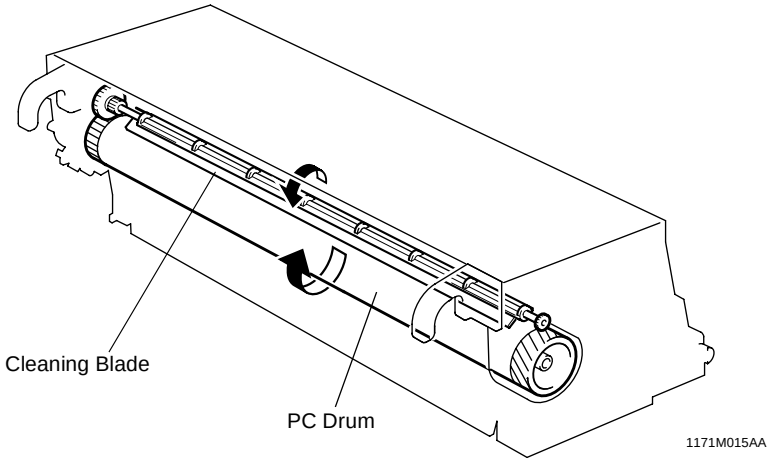
- The three PC Drum Paper Separator Fingers fitted to the I/C mechanically separate paper from the surface of the PC Drum to ensure good and positive paper separation.

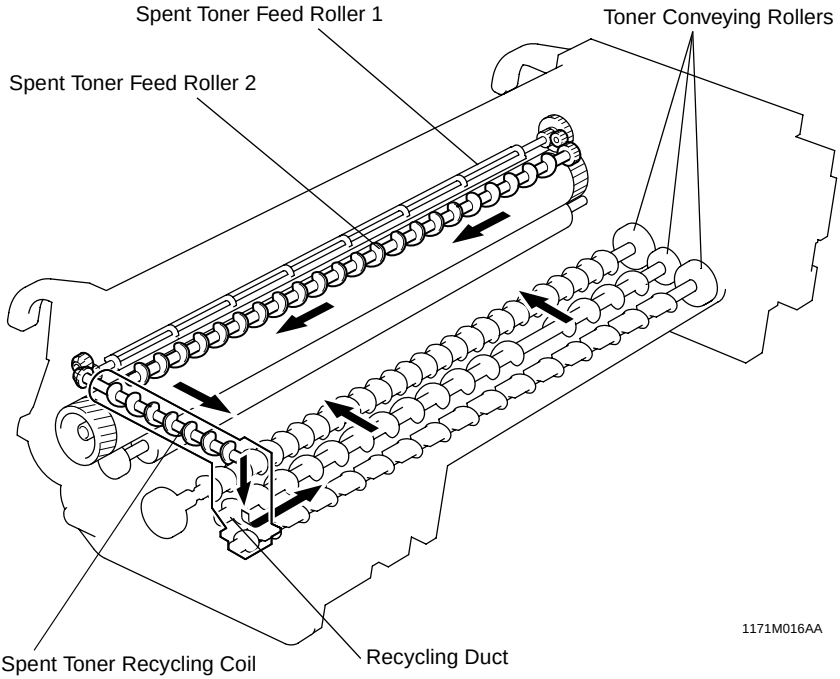




18 PC DRUM CLEANING

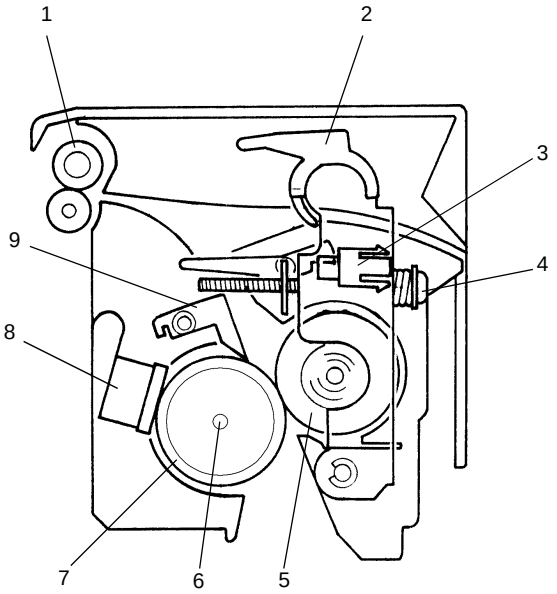
- This copier employs a spent toner recycling mechanism. The Cleaning Blade which is held pressed against the surface of the PC Drum scrapes residual toner off the surface. The waste toner is conveyed by Spent Toner Feed Roller 1 and 2 to the Spent Toner Recycling Duct and eventually back to the Developer Mixing Chamber.





19 FUSING UNIT

- The paper, to which the developed image is yet to be fixed, is fed through heated Left and Right Fusing Rollers. The heat and pressure applied at this time fixes the image permanently to the paper.

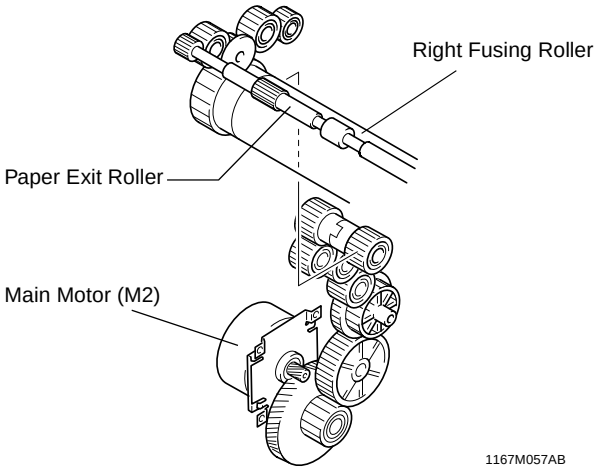


1167M078AB

1. Paper Exit Roller
2. Fusing Misfeed Clearing Lever
3. Paper Exit Sensor (PC3)
4. Pressure Spring
5. Right Fusing Roller
6. Fusing Roller Heater Lamp (H1)
7. Left Fusing Roller
8. Fusing Roller Thermostat (TS1)
9. Fusing Paper Separator Finger

1170SBM1901A
19-1. Drive Mechanism

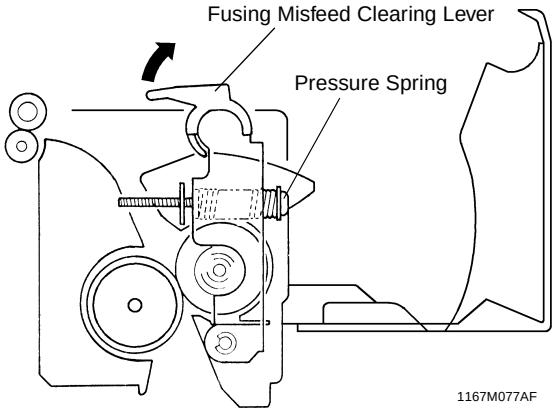
- Drive from the Main Motor is transmitted via a gear train to the Right Fusing Roller.



Electrical Component	Control Signal	ON	OFF
M2	PJ16A-1	L	H

1170SBM1902A
19-2. Fusing Rollers Pressure Mechanism

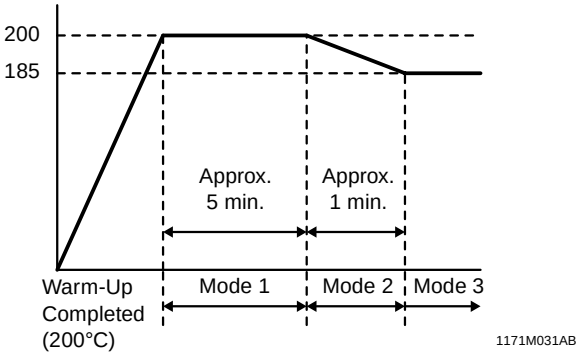
- To ensure that there is a certain width of area of contact between the Left and Right Fusing Rollers, pressure springs are installed.
- The rollers are held pressed against each other at all times and they are released only when servicing the copier or replacing parts.
- The pressure between the two rollers is approx. 12 kg.
- The rollers can be released by moving the Fusing Misfeed Clearing Lever in the direction of the arrow.



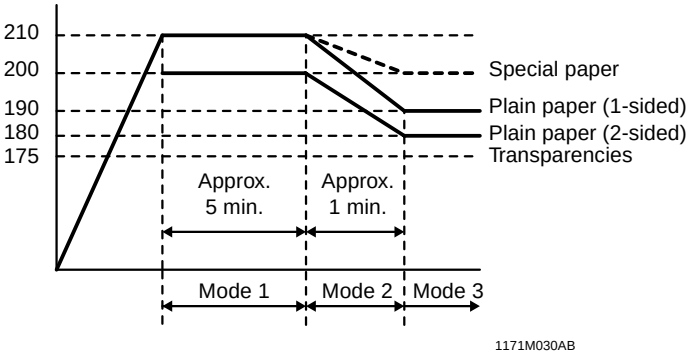
19-3. Fusing Temperature Control

- The Fusing Roller Heater Lamp inside the Left Fusing Roller provides the following temperature control.

- Temperature Control During Standby State -



- Temperature Control During a Copy Cycle -



<Temperature Control>

- The Fusing Roller Thermistor detects the surface temperature of the Left Fusing Roller. It provides an analog voltage input to the Master Board allowing the copier to control the fusing temperature.

Electrical Component	Control Signal	ON	OFF
H1	PJ16A-8	L	H

Electrical Component	Control Signal	Low Temp. ↔ High Temp.
TH1	PJ16A-5	Analog input

<Temperature Control by Mode>

- The mode that is initiated following the completion of a warm-up cycle varies as detailed below depending on the machine condition and the Fusing Roller temperature at the restart of temperature control.

Machine Condition	Fusing Roller Temperature	
	Less than 100°C	100°C or higher
Power is turned ON.	Mode 1	Mode 2
Temperature control is interrupted during warm-up.		Mode 1
Temperature control is interrupted during mode 1.		
Temperature control is interrupted during mode 2.		Mode 2
Temperature control is interrupted during mode 3.		

1170SBM1904A

19-4. CPM Control

- As a measure to prevent the temperature on the edges of the Fusing Rollers (over which no part of paper passes) from rising in a multi-copy cycle using small size paper (width of 250 mm or less), the paper feed interval is made greater.

<Control>

- If a sheet of small size paper is taken up and fed in during mode 1, control is switched to mode 2.
- The number of sheets of small size paper that are fed through is counted.

<Timing>

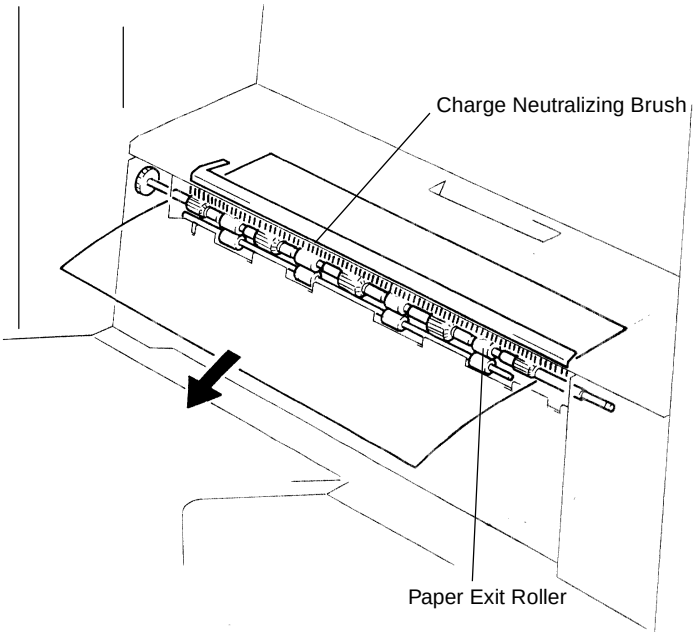
- The counter reaches 30.
- The plain/special paper counter reaches N specified below:
  If the control is in mode 1 or mode 2 when the counter starts counting, N = 30.
  If the control is in mode 3 when the counter starts counting, N = 100.

<Resetting>

- If a period of 2 min. or more elapses, during which the counter does not count up after the counter has started counting, the counter is cleared resetting the CPM control.

20 PAPER EXIT UNIT

- The Paper Exit Roller feeds the paper, to which the developed image has been fixed, out of the copier. The Charge Neutralizing Brush touches the surface of the sheet of paper being fed out of the Fusing Unit to neutralize any static charge left on it. This effectively prevents two sheets of paper fed out of the copier from sticking to each other due to static charge.



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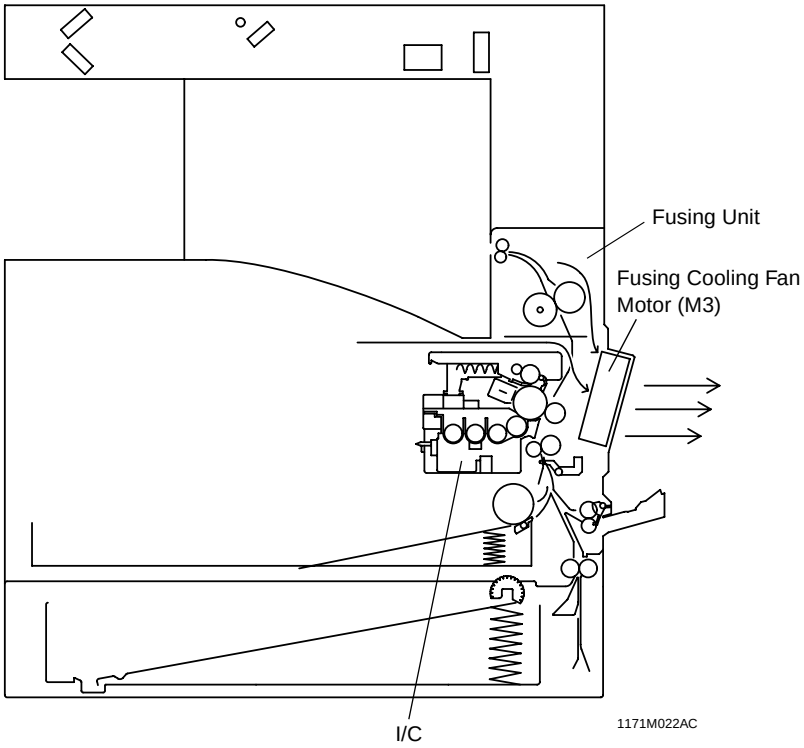
1170SBM2100A

21 FUSING COOLING FAN MOTOR

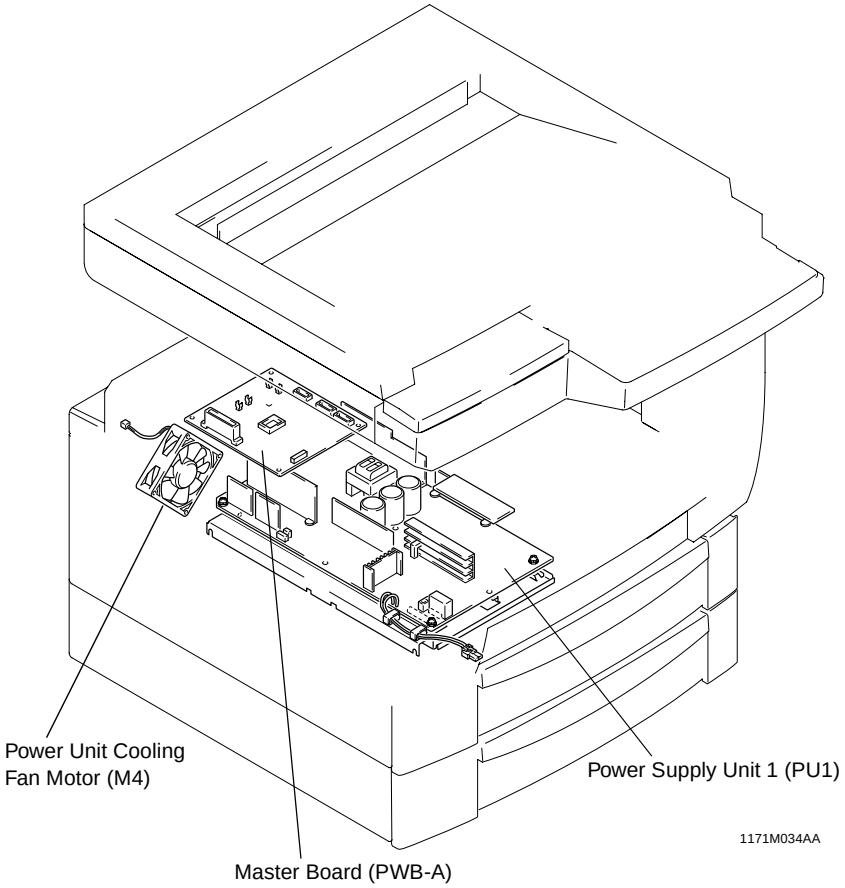
- The Fusing Cooling Fan Motor located in the Right Door prevents the temperature of the Fusing Unit Cover and the area above the I/C from rising inordinately. The motor also draws the paper after it has been separated from the PC Drum onto the transport guide to ensure that it is stably and smoothly fed into the Fusing Unit.



Electrical Component	Control Signal	During Copy Cycle	In Standby	During Warm-Up
		Full speed	Half speed	Stop
M3	PJ13A-3A	Pulse output		L

22 POWER UNIT COOLING FAN MOTOR

- The Power Unit Cooling Fan Motor prevents the temperature at the Power Supply Unit and the Polygon Motor in the PH from rising inordinately.



Electrical Component	Control Signal	While Main Motor is Turning	In Standby
		Full speed	Half speed
M4	PJ6A-2	DC24V	DC10V

Di250

SWITCHES ON PWBs, TECH. REP. SETTINGS

MINOLTA

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1 PRECAUTIONS FOR HANDLING THE PWBs

1-1. Precautions for Transportation and Storage

- Before transporting or storing the PWBs, put them in protective conductive cases or bags so that they are not subjected to high temperature and are not exposed to direct sunlight.
- Protect the PWBs from any external force so that they are not bent or damaged.
- Once the PWB has been removed from its conductive case or bag, never place it directly on an object that is easily charged with static electricity (such as a carpet or plastic bag).
- Do not touch the parts and printed patterns on the PWBs with bare hands.

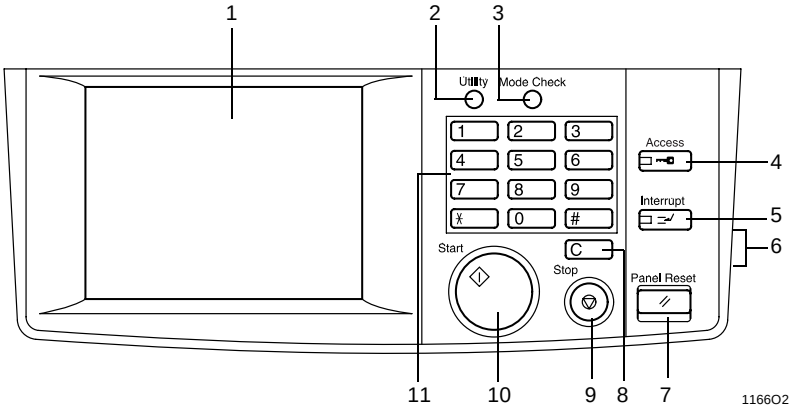
1-2. Precautions for Replacement and Inspection

- Whenever replacing the PWB, make sure that the power cord of the copier has been unplugged.
- When the power is on, the connectors should never be plugged in or unplugged.
- Use care not to strap the pins of an IC with a metal tool.
- When touching the PWB, wear a wrist strap and connect its cord to a securely grounded place whenever possible. If you cannot wear a wrist strap, touch the metal part to discharge static electricity before touching the PWB.

2 CONTROL PANEL KEYS AND TOUCH PANEL

✻ For more details, see the Operator's Manual shipped with the copier.

2-1. Control Panel Keys



1. Touch Panel
- Shows various screens and messages.

2. Utility Key
- Press to show the User Mode menu.

3. Mode Check Key
- Shows the Mode Check screen on which the user can check the current copying settings.

4. Access Mode Key
- Used to enter the access number. After the access number has been entered, pressing this key will allow the user to make copies.

5. Interrupt Key
- Sets the copier into, or lets it leave, the Interrupt mode.

6. Display Contrast Knob
- Turn to vary the brightness of the Touch Panel.

7. Panel Reset Key
- Clears all settings made on the control panel, setting the copier back into the initial mode.
- Cancels currently reserved jobs.

✻ It does not clear the zoom ratios and job settings stored in memory and Interrupt mode.

8. Clear Key
- Clears the number-of-copies setting, zoom ratio, and counter count.
- Cancels the image data read.

9. Stop Key
- Press to stop a scanning cycle.
- Press to stop a print cycle.

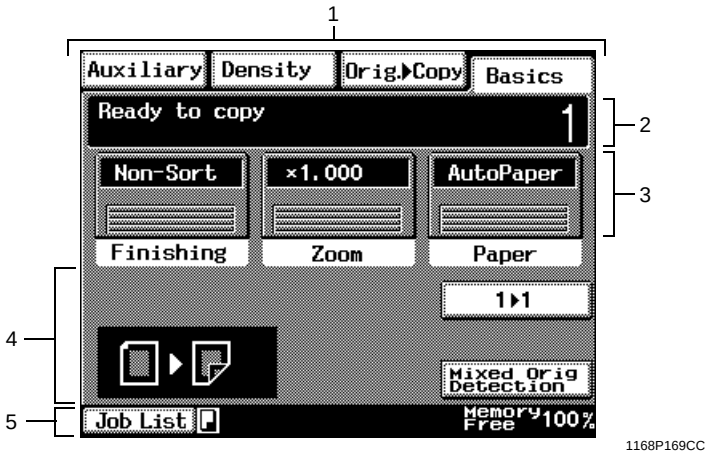
10. Start Key
- Press to start the document scanning sequence.
- Press to start a print cycle.

11. 10-key Pad
- Numeric key pad used for entering the number of copies to be made, zoom ratio, access number, and the Tech. Rep. mode settings.

2-2. Explanation of the Touch Panel

(1) Basic Screen

- The Basic screen is the initial screen that appears when the copier panel is reset or auto reset is activated.



1. Supplementary Function Key
- Selects the corresponding menu screen, either Auxiliary, Density, Orig. ▶ Copy, or Basics.

2. Message Display
- Shows the current copier status, operating instructions, caution/warning messages, and other data including the number of copies selected.

3. Basic Function Keys
- Allows the user to select the finishing, zoom ratio, and copy paper.

4. Function Display
- Shows graphic representations of the settings currently made for Orig. ▶ Copy and Finishing.

5. Status Display
- Shows what is being done with the current job and other data.

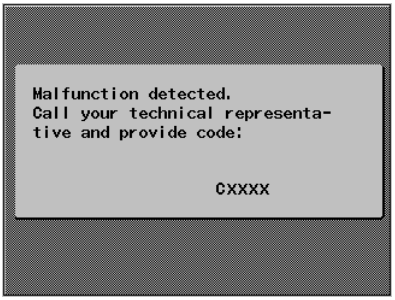
(2) Warning Screens

- The warning screen may be a malfunction display, error display, warning display, or a caution display.

<Malfunction Display>

- A malfunction display is given when trouble occurs which cannot be corrected by the user.

Example: Malfunctions that can be identified with a specific code.



1171S001CB

<Error Display>

- An error display is given when trouble occurs which can be corrected by the user.

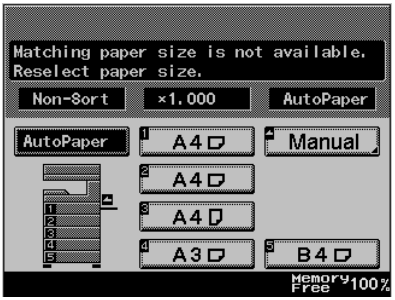
Example: Paper misfeed, toner empty, door open.

1168P167CD

<Warning Display>

- A warning display is given when any further copier operation will not be possible, or only a defective copy will be produced, because of erroneous or illegal panel settings or other cause.

Example: Unmatched paper size in Auto Paper.



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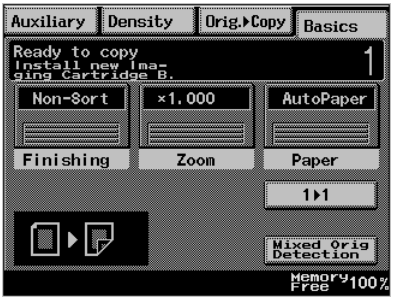
<Caution Display>

- A caution display is given when, though further copier operation will be possible, it could result in a malfunction.

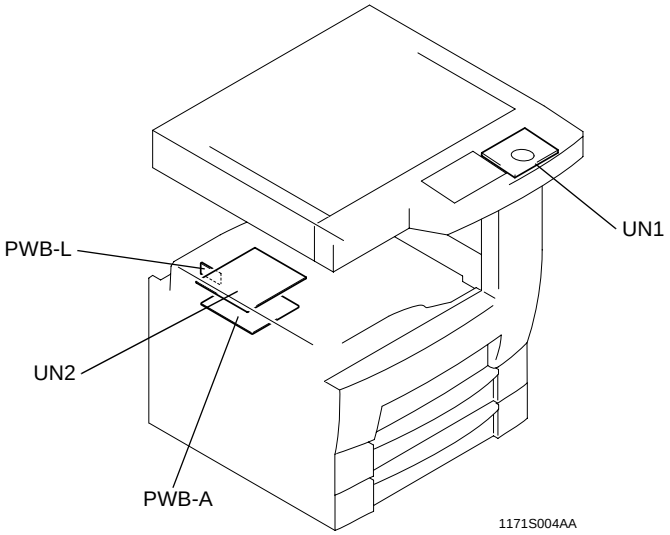
Example: Install new Imaging Cartridge.



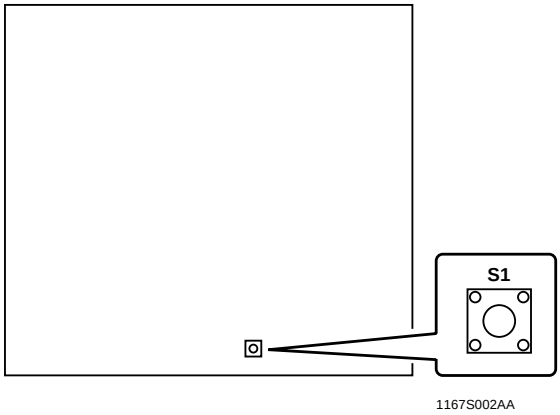
1171S003CB

3 FUNCTION OF SWITCHES AND OTHER PARTS ON PWBs

3-1. PWB Location

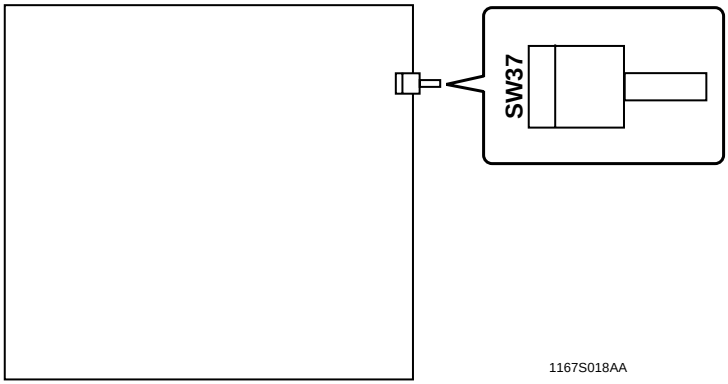


3-2. PWB-A (Master Board)



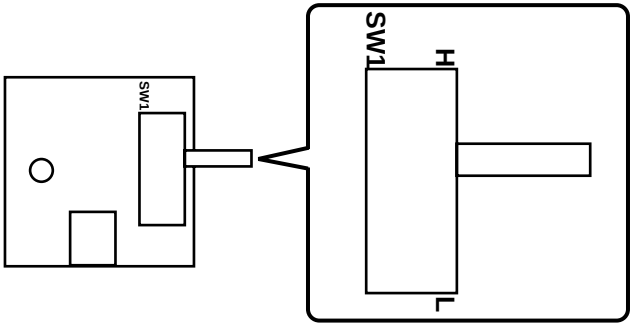
Symbol	Name	Description
S1	Test Print Switch	Used to run a test print cycle.

3-3. UN1 (Control Panel)



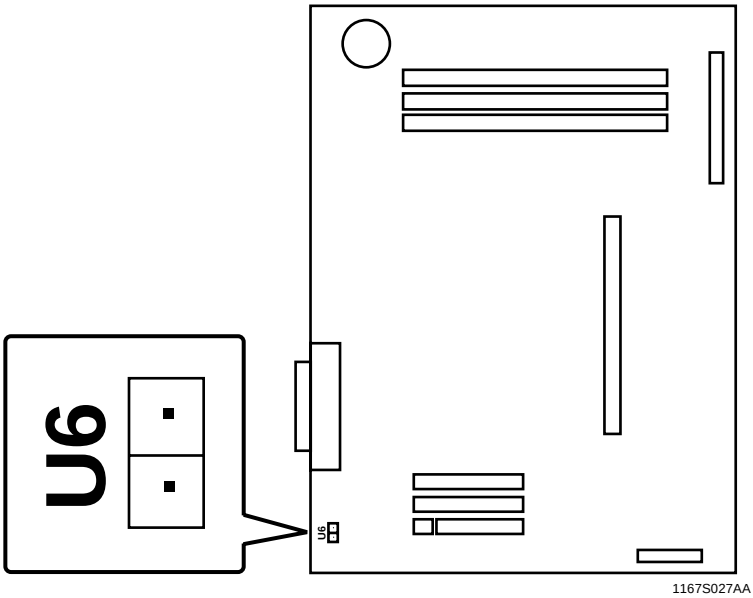
Symbol	Name	Description
SW37	Warm Restart Switch	• Used to enter the initial mode. • Used to restart the copier after a breakdown.

3-4. PWB-L (PPM Switching Board)



Symbol	Name	Description
S1	Low-Speed Mode Selecting Switch	Used to make longer the paper-to-paper intervals as a means of preventing the problem in which sheets of paper are fed out untidily when large size paper left to stand under high humidity condition is being used. ✻ Keep this switch in the H position, as it is only for special users.

3-5. UN2 (MFB Board)



1167S027AA

Symbol	Name	Description
U6	Forced Memory Clear	Used when it is not possible to clear RAM by warm restart.

✻ Be careful about using these pins, as closing these pins clears all data including counter data.

<Clearing Procedure>

1. Turn OFF the Power Switch.
2. Remove the Upper Cover and MFB Box Cover.
3. Close U6 and, in that condition, turn ON the Power Switch.

NOTE

Use care not to close any other circuit.

4. When the initial screen appears, turn the Power Switch OFF.
5. Open U6.

NOTE

When Forced RAM Clear has been performed, make these adjustments and settings once again in this order:

1. "Marketing Area" of "Initial mode"

2. "Memory Clear" of "Initial mode"

3. Other adjustments and settings as necessary

<Data/Conditions Cleared by Reset Switches/Pins>

Switches/Pins / Data/Conditions Cleared	Power Switch OFF/ON	Side Cover open/ close	Initial Mode			Forced RAM Clear
			Memory Clear	Total Clear	Trouble Reset	
Misfeed display	❍	❍	❍	—	❍	❍
Malfunction display (other than Fusing)	❍	❍	❍	—	—	❍
Malfunction display (all including Fusing)	—	—	❍	—	❍	❍
Erratic operation/ display	—	—	❍	—	❍	❍
User's Choice	—	—	❍	—	—	❍
Tech. Rep. Mode	—	—	❍	—	—	❍
Counter	—	—	—	❍	—	❍
RD Mode	—	—	—	❍	—	❍
Security Mode	—	—	❍	—	—	❍
Adjust Mode	—	—	—	—	—	❍

❍: Cleared (initialized) —: Not cleared

4 USER'S CHOICE MODE

- The User's Choice mode is used to make various settings according to the user's needs.

4-1. User's Choice Selection Screen

1167S009CB

4-2. User's Choice Function Setting Procedure

<Setting Procedure>

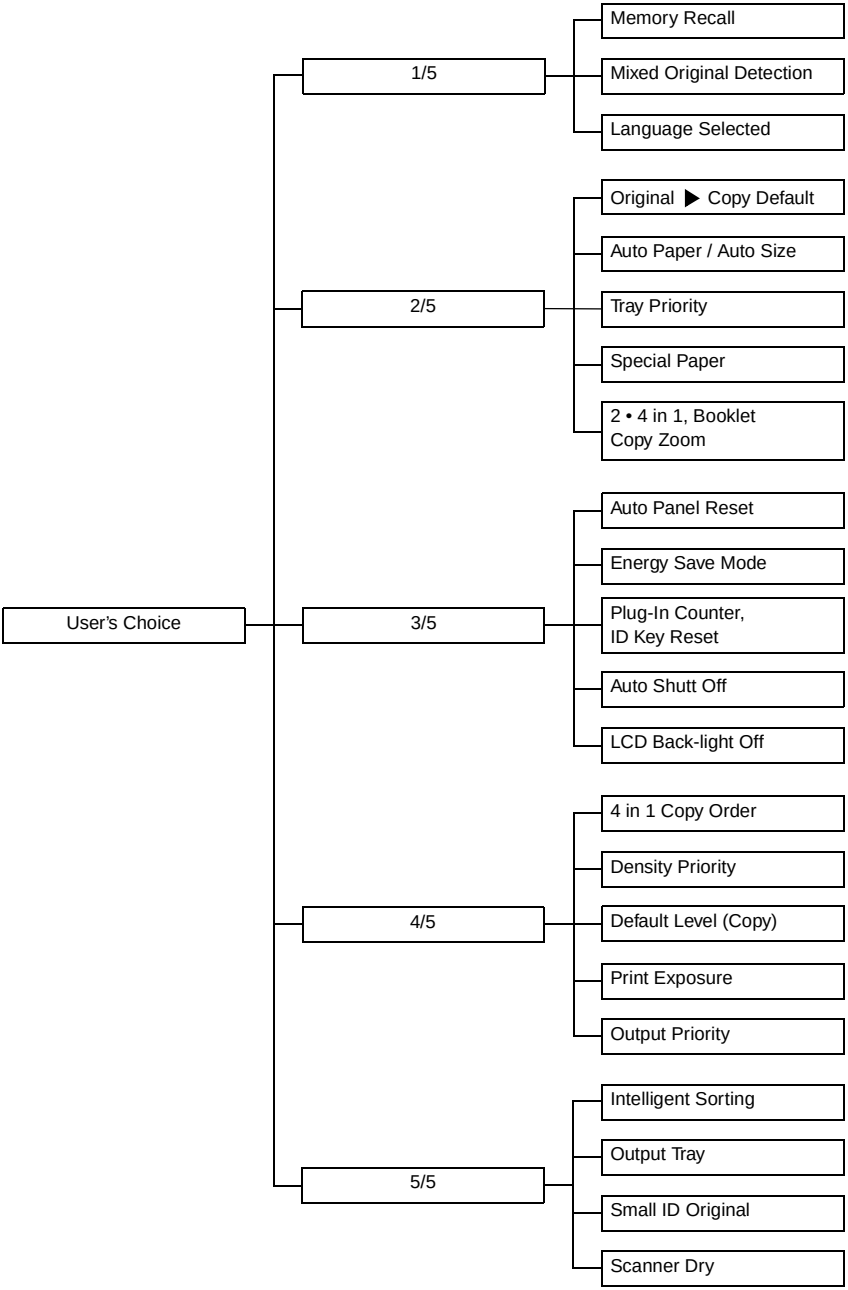
1. Press the Utility key on the control panel and then touch the "User's Choice" key.
2. Select the page number key that contains the desired function from among 1/5 through 5/5 shown at the bottom of the Touch Panel.
3. Select the function to be set and make settings as required.
4. After the settings are complete, touch the "Enter" key to validate the settings.

✻ The function selected is highlighted.

<Exiting the Mode>

- Touch [Exit] on the screen to go back to the Basic screen.

4-3. User's Choice Function Tree

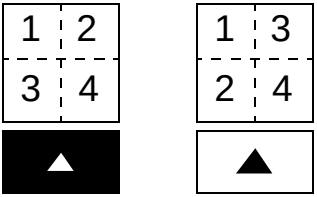


4-4. Settings in the User's Choice Mode

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Memory Recall</td><td>Select whether to enable (“ON”) or disable (“OFF”) the function that retains the image data even after the last copy paper has been fed out, allowing the user to recall the same image data.
<table><tr><td>ON</td><td>OFF</td></tr></table></td></tr>
<tr><td>Mixed Original Detection</td><td>Select whether to let the system select by default (“ON”) the Mixed Original Detection mode or not (“OFF”) when power is turned ON or the Panel Reset key pressed.
<table><tr><td>ON</td><td>OFF</td></tr></table></td></tr>
<tr><td>Language Selected</td><td>Select the language of the Touch Panel messages.
<Metric Areas>
<table><tr><td>ENGLISH</td><td>GERMAN</td><td>FRENCH</td></tr><tr><td>DUTCH</td><td>ITALIAN</td><td>SPANISH</td></tr><tr><td>PORTUGUESE</td><td>DANISH</td><td>NORWEGIAN</td></tr><tr><td>SWEDISH</td><td>FINISH</td><td>JAPANESE</td></tr></table><Inch Areas>
<table><tr><td>ENGLISH</td><td>FRENCH</td><td>SPANISH</td></tr><tr><td>JAPANESE</td></tr></table></td></tr>
</table>

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Original ▶ Copy Default</td><td>Select the type of Original ▶ Copy setting selected automatically when the copier is turned ON or Panel Reset key pressed. If “Duplex only” is selected for “Simplex/Duplex” of the “Tech. Rep. Choice” function, 1 ▶ 1 is not displayed.
<1-Sided ▶ 2-Sided>
<table><tr><td>1-Sided ▶
2-Sided</td><td>2-Sided ▶
2-Sided</td><td>1-Sided ▶
1-Sided</td></tr></table>
<1-Sided ▶ 2-Sided>
<table><tr><td>1-Sided ▶
2-Sided</td><td>2-Sided ▶
2-Sided</td></tr></table></td></tr>
<tr><td>Auto Paper/ Auto Size</td><td>Specify the default mode selected automatically when power is turned ON or the Panel Reset key pressed.
<table><tr><td>Auto Paper</td><td>Auto Size</td><td>Manual</td></tr></table></td></tr>
<tr><td>Tray Priority</td><td>Specify the paper source selected automatically.
<table><tr><td>1st Drawer</td></tr><tr><td>2nd Drawer</td></tr><tr><td>3rd Drawer</td></tr><tr><td>4th Drawer</td></tr><tr><td>5th Drawer</td></tr><tr><td>LCT</td></tr></table>✻ Manual Bypass Tray is not selectable.</td></tr>
<tr><td>Special Paper</td><td>Set up a drawer for special paper loading.
<table><tr><td>Normal</td><td>Not for 2-Sided</td></tr><tr><td>Recycled</td><td>Special</td></tr></table></td></tr>
<tr><td>2 • 4 in 1, Booklet Copy Zoom</td><td>Select whether to enable (“ON”) or disable (“OFF”) recalling a default zoom ratio for 2in1, 4in1, or Booklet Creation.
<table><tr><td>ON</td><td>OFF</td></tr></table>The default zoom ratios are as follows when “ON” has been selected.
< Metric Areas >
<table><tr><td>× 0.500 4in1</td></tr><tr><td>× 0.707 2in1/Booklet</td></tr><tr><td>× 1.414 Separation</td></tr></table>
< Inch Areas >
<table><tr><td>× 0.500 4in1</td></tr><tr><td>× 0.647 2in1/Booklet</td></tr><tr><td>× 1.545 Separation</td></tr></table></td></tr>
</table>

<table>
<tr><td>Touch Panel Display</td><td>Setting (The default is Highlighted).</td></tr>
<tr><td>Auto Panel Reset</td><td>Specify the default exposure mode selected automatically when power is turned ON or the Panel Reset key pressed.
<table>
<tr><td>30 seconds</td><td>1 min</td><td>2 min</td></tr>
<tr><td>3 min</td><td>5 min</td><td>No Reset</td></tr>
</table></td></tr>
<tr><td>Energy Save Mode</td><td>Set the time it takes the copier to enter the Energy Saver mode after a copy cycle has been completed or the last key operated. Use the 10-key Pad to set the time (1 to 240 min.).
<table>
<tr><td>(1 to 240) (15 min)</td></tr>
</table></td></tr>
<tr><td>Plug-In Counter, ID key Reset</td><td>Select whether to reset (“ON”) the panel or not (“OFF”) automatically when the Access Mode key is pressed or the Key Counter is unplugged.
<table>
<tr><td>ON</td><td>OFF</td></tr>
</table></td></tr>
<tr><td>Auto Shut Off</td><td>Select whether to turn ON or OFF the Auto Shut Off function that shuts down the copier a given period of time after a copy cycle has been completed or the last key operated. Selecting “ON” means setting the time it takes the Auto Shut Off function to be activated, that can range from 15 min. to 240 min.
<table>
<tr><td>No Reset</td><td>(15 to 240) (60 min)</td></tr>
</table>
✻ The option of “No Reset” becomes available on the screen if “Yes” is selected for “Disable Sleep” of Utility - Admin. Management - Administrator Set.</td></tr>
<tr><td>LCD Back-light Off</td><td>Set the time it takes the LCD backlight to turn OFF after a copy cycle has been completed or the last key has been operated.
<table>
<tr><td>(1 to 240) (1 min)</td></tr>
</table></td></tr>
</table>

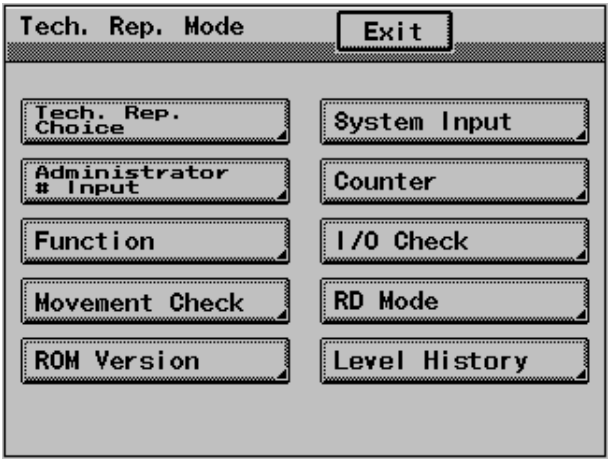
Touch Panel Display	Setting (The default is **Highlighted**).
4 in 1 Copy Order	Specify the default copying order in the 4in1 mode. 
Density Priority	Specify the default exposure mode selected automatically when power is turned ON or the panel Reset key pressed. <Density> **Auto** | Manual ✻ "Photo" of "Original Image Type" cannot be selected when "Auto" is selected. <Original Image Type> **Text** | Photo | Text/Photo
Default Level (Copy)	Auto: Select the default exposure level in the Auto Exposure mode. Manual: Set the default exposure level in the Manual Exposure mode. <Auto> Lighter | **Normal** | Darker <Manual> Lighter … Darker ✻ EXP. 1 (Lighter) to EXP. 9 (Darker)
Print Exposure	Set the image density level for printing. -3 | -2 | -1 | **0** | 1 | 2 | 3
Output Priority	Select the default finishing type when the copier is equipped with a Sorter or Staple Sorter. **Non-Sort** / Sort / Group Staple ✻ Staple can be combined with either Sort or Group. Hole Punch ✻ Hole Punch can be combined with any one of the functions.

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Intelligent Sorting</td><td>When the system is equipped with a finishing option and the ADF is being used, select whether to turn “ON” or “OFF” the function that automatically switches between Sort and Non-Sort according to the number of originals loaded in the ADF.
<table><tr><td>ON</td><td>OFF</td></tr></table></td></tr>
<tr><td>Output Tray</td><td>Select the output tray for each application when the system is equipped with a Job Tray or Finisher.
<Printer>
• Job Tray
<table><tr><td>1</td><td>2</td></tr></table>• Finisher
<table><tr><td>1</td><td>2</td></tr></table><Copier>
<table><tr><td>1</td><td>2</td></tr></table>✻ 1: 1st tray; 2: 2nd tray
✻ When the system is equipped with a Finisher, the option of “Copier” and the tray designation keys “1” and “2” are not displayed.</td></tr>
<tr><td>Small ID Original</td><td>Select whether to enable (“ON”) a copy cycle or not (“OFF”) when it is initiated with no original placed on the Original Glass or with an original of a small size that is not detectable by the system (smaller than A5) placed on the Original Glass.
<table><tr><td>ON</td><td>OFF</td></tr><tr><td>The copy cycle is run using the paper loaded in the default paper source.</td><td>A warning message is given and the copier inhibits the start of this copy cycle.</td></tr></table></td></tr>
<tr><td>Scanner Dry</td><td>Set the time-of-day to run a Scanner drying cycle.
<table><tr><td>Hours</td><td>Minutes</td></tr><tr><td>00 ~ 23</td><td>00 ~ 59</td></tr></table>✻ When entering a value for Hours and Minutes and if it is a one-digit number, first enter a “0.”</td></tr>
</table>

5 TECH. REP. MODE

- This mode is used by the Tech. Rep. to set, check, adjust, and/or program various service functions.

5-1. Tech. Rep. Mode Menu Screen



1171S005CA

5-2. Tech. Rep. Mode Function Setting Procedure

<Setting Procedure>

1. Set the copier into the Tech. Rep. mode by the following method:

- With the “Meter Count” screen opened from the Utility menu screen, press the following keys in this order:

Stop Key ➡ 0 ➡ 0 ➡ Stop Key ➡ 0 ➡ 1

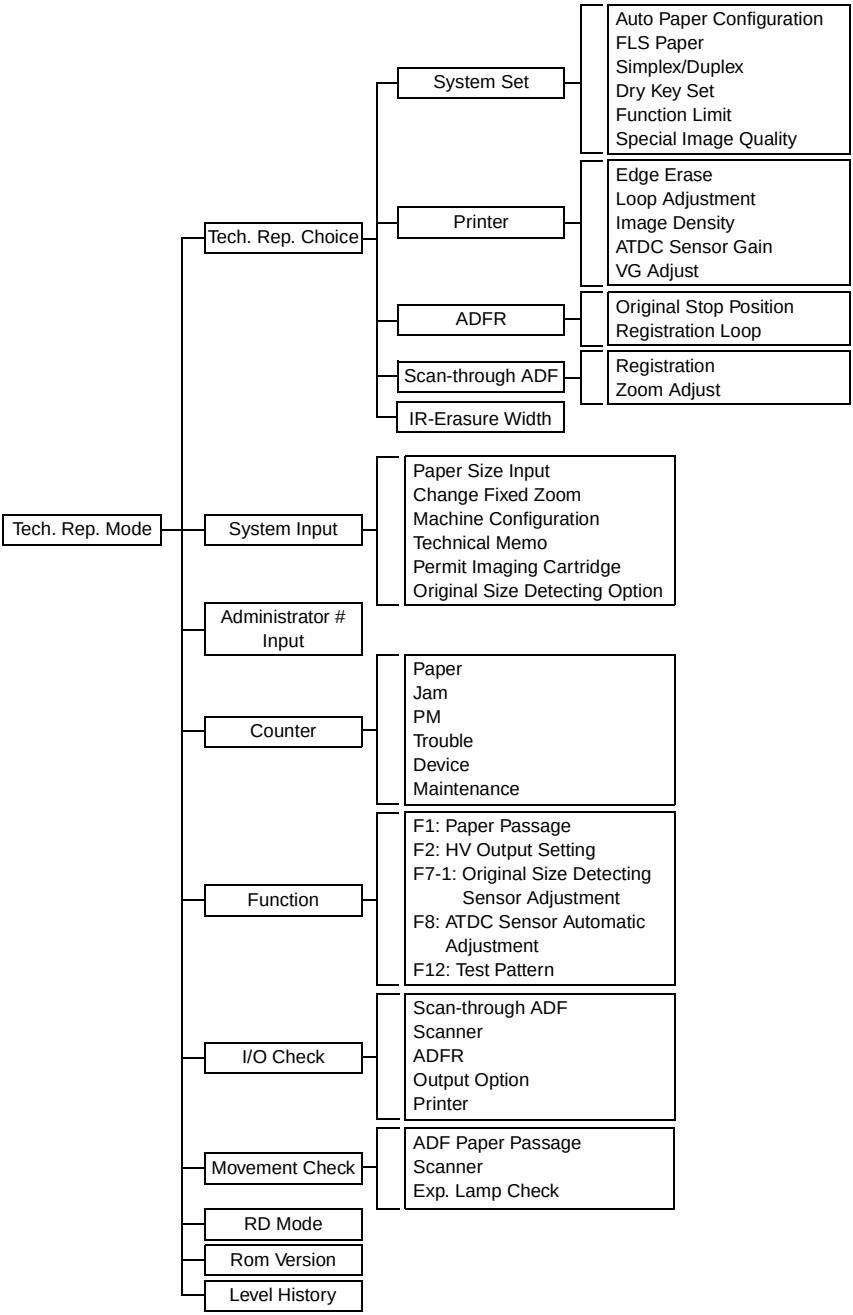
2. Select the particular Tech. Rep. mode function to be set.
3. Make the necessary settings according to the function selected.

✻ The function selected is highlighted.

<Exiting the Mode>

- Touch [Exit] on the screen to go back to the Basic screen.

5-3. Tech. Rep. Mode Setting Tree



5-4. Settings in the Tech. Rep. Mode

(1) Tech. Rep. Choice

- This function allows the Tech. Rep. to make the various settings and adjustments.

<Function>
1. System Set
2. Printer
3. ADFR
4. Scan-through ADF

<Setting Procedure>
1. Touch [Tech. Rep. Choice] to open a screen to Tech. Rep. Choice.
2. Touch the desired major category key.
3. Touch the desired sub-category key.

Tech. Rep. Mode ▶ Tech. Rep. Choice

<System Set>

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Auto Paper Configuration</td><td><Metric Areas>
Select either “Inch/Metric” or “Metric” for rounding off the original size detected.
<table>
<tr><td>Inch / Metric</td><td>The measurement is rounded to the nearest standard inch or metric size.</td></tr>
<tr><td>Metric</td><td>The measurement is rounded to the nearest standard metric size.</td></tr>
</table>
<Inch Areas>
Select either “Inch/Metric” or “Inch” for rounding off the original size detected.
<table>
<tr><td>Inch / Metric</td><td>The measurement is rounded to the nearest standard inch or metric size.</td></tr>
<tr><td>Inch</td><td>The measurement is rounded to the nearest standard inch size.</td></tr>
</table></td></tr>
<tr><td>FLS Paper</td><td>Set the size for FLS.
<table>
<tr><td>F: 330 mm
C: 203 mm</td><td>F: 330mm
C: 210mm</td><td>F: 330 mm
C: 216 mm</td><td>F: 330 mm
C: 220 mm</td></tr>
</table></td></tr>
<tr><td>Simplex/Duplex</td><td>Select whether or not to enable the setting of 1-Sided ▶ 1-Sided under Original ▶ Copy Default available from User’s Choice.
✻ If “Simplex & Duplex” is selected, 1-Sided ▶ 1-Sided becomes available as an option.
<table>
<tr><td>Display</td><td>Simplex & Duplex</td><td>Duplex Only</td></tr>
<tr><td>Description</td><td>Does not limit the options for Original ▶ Copy Default to 2-sided copying only.</td><td>Limits the options for Original ▶ Copy Default to 2-sided copying only.</td></tr>
</table></td></tr>
</table>

Touch Panel Display	Setting (The default is **Highlighted**).
Dry Key Set	Select whether to display the Dry key for "User Management" of Utility. If the key is to be displayed, select whether to dry only the Scanner or both Scanner and Drum. Scanner / Scanner & Drum / **Disable**
Function Limit	Select whether to limit ("ON") the functions to be set on the control panel or not ("OFF"). ON: Enables the functions other than Orig. ▶ Copy and Auxiliary. **OFF**: Enables all functions (no Limit).
Special Image Quality	Select whether to enable the selection of Special Image Quality for "Density Priority" of User's Choice (applicable on a case-by-case basis). ✻ Touching the "✻" key on the System Set menu selects or cancels this function. ✻ Key high-lighted: The Special Image Quality key is displayed. ✻ Key not high-lighted: The Special Image Quality key is not displayed.

<Printer>

Touch Panel Display	Setting (The default is **Highlighted**).
Edge Erase	Set the erase width on the leading, trailing, right, and left edge of the image. Leading / Trailing / Right/Left: 0mm..... **4** ..... 5mm Smaller ◄——► Greater
Loop Adjustment	Set the loop length to be formed before the Synchronizing Rollers. 1st Drawer / Other Drawers / Duplex & Manual: -5mm..... **0** ..... +5mm Smaller ◄——► Greater

Touch Panel Display	Setting (The default is **Highlighted**).
Image Density	Set the image density for the printer. ✻ The value set for this function becomes the central value of “Print Exposure” of User’s Choice. -2 ..... **0** ..... +4 Lighter ◄——► Darker
ATDC Sensor Gain	Current: Shows the current ATDC control voltage. Set: Set the ATDC control voltage. ✻ If the “Set” value is to be changed, be sure to record the “Current” value. ✻ The ATDC Sensor Gain value can be converted to a voltage value using the following equation. ATDC Sensor Gain = 5.1 × 2.2 × [setting value] ÷ 256 (V) 123 ..... **155** ..... 186 T/C Greater ◄——► T/C Smaller
VG Adjust	Set VG when a fog or void occurs in the image. -2 ..... **0** ..... +2 Lighter ◄——► Darker

<ADFR>

Touch Panel Display	Setting (The default is **Highlighted**).
Original Stop Position	Set the document stop position in each of the ADFR modes. 1-Sided Set / 2-Sided Set / Single Feed Set: -7 ..... **0** ..... +7 Original Width Scale end ◄——► Original Glass end ✻ The minimum setting value is -6 only for 2-Sided Set.
Registration Loop	Set the loop length to be formed in the original before the Registration Roller of ADFR. -5mm ..... **0** ..... +5mm Smaller ◄——► Greater

<Scan-through ADF>

Touch Panel Display	Setting (The default is **Highlighted**).
Registration	Adjust registration in the main and sub scanning directions of the ADF. -127 dot..... **0** ..... +127 dot Smaller ◄——► Greater
Zoom Adjust	Adjust the scanning zoom ratio in the main and sub scanning directions of the ADF. 0.990 ..... **1.000** ..... 1.010 Smaller ◄——► Greater

<IR-Erasure Width>

Touch Panel Display	Setting (The default is **Highlighted**).
IR-Erasure Width	Set the forced erasure width along the four edges of the paper to erase shadows which are otherwise produced by the Original Scales. **0mm** .....3mm Smaller ◄——► Greater

(2) System Input

- This function allows the Tech. Rep. to change the fixed zoom ratios, set the paper size, define the marketing area, configure for the Key Counter, and input the telephone number.

<Setting Procedure>
1. Touch [System Input] to open the System Input menu screen.
2. Touch the desired subfunction key.

Tech. Rep. Mode ▶ System Input

Touch Panel Display	Operation
Paper Size Input	Set the size of the paper used in each paper source. ✻ This function cannot be used for the LCC as its paper is set with its internal DIP switch. <Procedure> 1. Touch the key of the paper source for which the paper size setting is to be changed to show the Paper Size Input screen. 2. Touch the desired paper size key. ✻ If the 10-key Pad has been selected, enter the FD and CD size of the paper from the 10-Key Pad. 3. Touch [END] to validate the paper size setting.
Change Fixed Zoom	Change a fixed zoom ratio to a desired value in the range between ×0.250 and ×4.000. <Procedure> 1. Touch the key of the fixed zoom ratio to be changed. 2. Press the Clear key to clear the setting and enter the new ratio from the 10-Key Pad. 3. Touch [Input] to validate the new setting.
Machine Configuration	Displays the machine configuration status.
Technical Memo	Enter the serial number and other data.
Permit Imaging Cartridge	Select whether to permit the use of an illegal Imaging Cartridge installed. The use is enabled when [Enter] is touched after “Yes” has been selected. ✻ It is not possible to disable the use of an Imaging Cartridge once permitted. Yes / **No**
Original Size Detecting Option	Set whether the optional Original Size Detecting Sensor is available or not. ON / **OFF**

(3) Administrator # Input

- This function allows the Tech. Rep. to set the administrator number that is used to open the “Admin. Management” screen of Utility.

<Setting Procedure>
1. Touch [Administrator # Input] to open the Administrator # Input menu screen.
2. Blank out the numeric data with the Clear key and enter the desired number from the 10-Key Pad.
3. Touch [Enter] to validate the entry of the number.

Tech. Rep. Mode ▶ Administrator # Input

Touch Panel Display	Operation
Administrator # Input	Set the administrator number used to open the “Admin. Management” screen of Utility from the 10-Key Pad. (1 to 8 digits: 0 to 99999999)

(4) Counter

- This function maintains the counts of the various counters, thus aiding the Tech. Rep. in performing service jobs.

<Setting Procedure>
1. Touch [Counter] to open the Counter menu screen.
2. Touch [Check] and then the desired counter to open the detailed counter screen.
3. To clear a count, touch [Counter Reset], the key of the counter to be cleared, and [END].

✻ Two or more counters can be selected.

Tech. Rep. Mode ▶ Counter

Touch Panel Display	Operation
Paper	Shows the number of sheets of paper used by the size and type. Each counter may be reset to 0 independently of the others: <Paper Counter 1/2> Display / Description A3 / A3L B4 / B4L A4 / A4L/C B5 / B5L/C A5 / A5L/C B6 / B6L A6 / A6L 11 × 17 / 11” × 17”L 11 × 14 / 11” × 14” Letter / Letter L/C Legal / Legal L/C 5-1/2 × 8-1/2 / 5-1/2” × 8-1/2” L/C <Paper Counter 2/2> Display / Description FLS. / FLS. Normal / Normal Recycled / Recycled Special / Special Not for 2-Sided / Not for 2-Sided <Clearing a Count> Touch the item key whose count is to be cleared and press the Clear key. If a count is accidentally cleared, pressing the Interrupt key will undo the clear operation.

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>Jam</td><td>Shows the number of misfeeds that have occurred in different parts of the system, together with rates of occurrence (MCBJ, MDBJ). Each counter may be reset to zero independently of the others:

<Jam Counter 1/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MCBJ System</td><td>Average no. of copies made for each paper misfeed:
MCBJ Total Counter ÷ Jam Counter (including misfeeds in Finisher)</td></tr>
<tr><td>MCBJ Machine Only</td><td>Average no. of copies made for each paper misfeed:
MCBJ Total Counter ÷ Jam Counter (excluding misfeeds in Finisher)</td></tr>
<tr><td>1st Drawer</td><td>No. of misfeeds that occurred at the 1st Drawer of the copier</td></tr>
<tr><td>2nd Drawer</td><td>No. of misfeeds that occurred at the 2nd Drawer of the copier</td></tr>
<tr><td>3rd Drawer</td><td>No. of misfeeds that occurred at the 3rd Drawer of the copier</td></tr>
<tr><td>4th Drawer</td><td>No. of misfeeds that occurred at the 4th Drawer of the copier</td></tr>
<tr><td>5th Drawer</td><td>No. of misfeeds that occurred at the 5th Drawer of the copier</td></tr>
</table>

<Jam Counter 2/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Manual Feed</td><td>No. of misfeeds that occurred at the Manual Bypass Tray</td></tr>
<tr><td>Vertical Transport</td><td>No. of misfeeds that occurred at the paper take-up/transport section of the copier</td></tr>
<tr><td>Separator</td><td>No. of misfeeds that occurred at the paper separator section of the copier</td></tr>
<tr><td>Fusing</td><td>No. of misfeeds that occurred at the Fusing Unit of the copier</td></tr>
<tr><td>Duplex Entrance</td><td>No. of misfeeds that occurred at the turnover/storage section of the copier</td></tr>
<tr><td>Duplex Feed</td><td>No. of misfeeds that occurred at the paper take-up section of the Duplex</td></tr>
<tr><td>LCC Feed</td><td>No. of misfeeds that occurred at the paper take-up section of the LCC</td></tr>
</table>

<Jam Counter 3/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>LCC Transport</td><td>No. of misfeeds that occurred in the LCC transport section</td></tr>
<tr><td>Shift/2Bin Tray Transport</td><td>No. of misfeeds that occurred in the Shift/Job Tray transport section</td></tr>
<tr><td>Shift/2Bin Tray Exit</td><td>No. of misfeeds that occurred in the Shift/Job Tray exit section</td></tr>
<tr><td>Finisher Horizontal Transport</td><td>No. of misfeeds that occurred in the Finisher horizontal transport section</td></tr>
<tr><td>Finisher Transport</td><td>No. of misfeeds that occurred in the Finisher transport section</td></tr>
<tr><td>Finisher Exit</td><td>No. of misfeeds that occurred in the Finisher exit section</td></tr>
<tr><td>Finisher Staple</td><td>No. of Finisher staple misfeeds that occurred</td></tr>
</table>
✻ 2Bin Tray = Job Tray</td></tr>
</table>

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>Jam</td><td>
<Jam Counter 4/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Finisher Set Transport MDBJ</td><td>No. of misfeeds that occurred in the Finisher Tray
Average no. of document transport sequences for each document misfeed:
ADFR Document Passage Counter ÷ ADFR Jam Counter</td></tr>
<tr><td>ADF (Scan-through ADF) Feed</td><td>No. of misfeeds that occurred at the paper take-up section of the ADF (Scan-through ADF)</td></tr>
<tr><td>ADF (Scan-through ADF) Transport</td><td>No. of misfeeds that occurred at the document transport section of the ADF (Scan-through ADF)</td></tr>
<tr><td>ADFR Reverse</td><td>No. of misfeeds that occurred at the document turnover and exit sections of the ADFR</td></tr>
<tr><td>SADF</td><td>No. of misfeeds that occurred at the SADF</td></tr>
</table>
<Jam Counter 5/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Printer</td><td>No. of misfeeds that occurred due to illegal designation of FCU2</td></tr>
<tr><td>Engine</td><td>No. of misfeeds that occurred due to communication error with engine (VD fault)</td></tr>
</table>
<Clearing a Count>
Touch the item key whose count is to be cleared and press the Clear key. If a count is accidentally cleared, pressing the Interrupt key will undo the clear operation.
</td></tr>
<tr><td>PM</td><td>
Shows the frequency of use of each of the PM parts. Each counter may be reset to 0 independently of the others:
<PM Counter 1/3>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>I/C Life</td><td>No. of revolutions of I/C</td></tr>
<tr><td>Fusing Unit</td><td>No. of times a sheet of paper is fed out</td></tr>
<tr><td>1st Drawer</td><td>No. of sheets of paper fed from the 1st Drawer</td></tr>
<tr><td>2nd Drawer</td><td>No. of sheets of paper fed from the 2nd Drawer</td></tr>
<tr><td>3rd Drawer</td><td>No. of sheets of paper fed from the 3rd Drawer</td></tr>
<tr><td>4th Drawer</td><td>No. of sheets of paper fed from the 4th Drawer</td></tr>
<tr><td>5th Drawer</td><td>No. of sheets of paper fed from the 5th Drawer</td></tr>
</table>
<PM Counter 2/3>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>LCC Parts 1</td><td>No. of sheets of paper fed from the LCC (for 200k)</td></tr>
<tr><td>LCC Parts 2</td><td>No. of sheets of paper fed from the LCC (for 300k)</td></tr>
<tr><td>Other PM Parts 1</td><td>No. of print cycles run (for 100k)</td></tr>
<tr><td>Other PM Parts 2</td><td>No. of print cycles run (for 150k)</td></tr>
<tr><td>Other PM Parts 3</td><td>No. of print cycles run (for 60k/120k)</td></tr>
<tr><td>1-Sided</td><td>No. of times a 1-sided original is fed through</td></tr>
<tr><td>2-Sided</td><td>No. of times a 2-sided original is fed through</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>PM</td><td>
<PM Counter 3/3>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>SADF
IR 1
IR 2
2 Bin Tray
Toner Pages</td><td>No. of single feeds
No. of scan motions (for 60k)
No. of scan motions (120k)
No. of cycles of feeding paper out into Job Tray
No. of pages equivalent to the no. of black dots on A4 original with B/W 5%</td></tr>
</table>
✻ 2Bin Tray = Job Tray
<Clearing a Count>
Touch the item key whose count is to be cleared and press the Clear key. If a count is accidentally cleared, pressing the Interrupt key will undo the clear operation.
✻ I/C Life cannot be cleared.
</td></tr>
<tr><td>Trouble</td><td>
Shows the number of malfunctions that have occurred in different parts of the system. Each counter may be reset to 0 independently of the others:
<Trouble Counter 1/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C0000
C0010
C0045
C004C</td><td>Main Motor
I/C Motor
Cooling Fan
Ventilation Fan</td><td>C004E
C0070
C0500
C0510</td><td>Cooling Fan (Power Supply)
Toner Bottle Motor
Fusing Warming-up
Fuser Low Temperature</td></tr>
</table>
<Trouble Counter 2/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C0520
C0650
C0651
C0990</td><td>Fuser High Temperature
Home Sensor
Left Sensor
LCC Transport Motor</td><td>C0991
C0995
C0999
C099D</td><td>LCC Lift 1 Limit
LCC Lift Motor
LCC Lift 2 Limit
LCC Communication</td></tr>
</table>
<Trouble Counter 3/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C0B00
C0B0F
C0B30
C0B38</td><td>Transport Drive Motor
Horiz. Trans. Route Switch
Paper Aligning Bar Unit
Paper Standard Board Unit</td><td>C0B4D
C0B4E
C0B50
C0B80</td><td>Assist Tray Unit
Transaction Tray Unit
Staple Unit
Shift Tray Shift</td></tr>
</table>
<Trouble Counter 4/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C0BA0
C0F32
C0F33
C1038</td><td>Elevate Motor
ATDC Sensor
ATDC Adjust
Engine Connection</td><td>C1300
C1330
C133A</td><td>Polygon Motor
Communication Error (VSYNC)
Communication Error (G/A)</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>Trouble</td><td>
<Trouble Counter 5/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C133B
C13C0
C13D0</td><td>Communication Error (Option)
I/C Initial Error
EEPROM</td><td>C13F0
C18XX</td><td>HSYNC (SOS)
Printer Controller Error</td></tr>
</table>
<Clearing a Count>
Touch the item key whose count is to be cleared and press the Clear key. If a count is accidentally cleared, pressing the Interrupt key will undo the clear operation.
</td></tr>
<tr><td>Device</td><td>
Shows the numbers of prints for different applications. It also allows the Tech. Rep. to clear each counter.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Copier</td><td>No. of prints made by copier</td></tr>
<tr><td>Printer</td><td>No. of prints made by printer</td></tr>
<tr><td>Report Print</td><td>No. of report prints made</td></tr>
<tr><td>Fax Print</td><td>No. of fax prints made</td></tr>
<tr><td>Fax Transmission</td><td>No. of prints made for fax transmission</td></tr>
</table>
<Clearing a Count>
Select the counter to be cleared with the item key and press the Clear key. If the count is accidentally cleared, pressing the Interrupt key will undo the clear operation.
</td></tr>
<tr><td>Maintenance</td><td>

This function allows the Tech. Rep. to set the number of copies to be made before the Maintenance Call reminder is given. (1k ~ 9999k)
It shows the current count value and the above setting. Each counter may be reset to 0 independently of the others:
When the count reaches the preset value, the icon “⚠” appears in the Status Display.

✻ When “Call Indicated” is selected for “Maintenance Call” available from Tech. Rep. Choice.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Maintenance (Set)</td><td>The Maintenance Call reminder is given when the count reaches the preset value.</td></tr>
<tr><td>Maintenance (Count)</td><td>Counts one for each copy made.</td></tr>
</table>
<Setting a Count>

Touch [Maintenance (Set)] and then press the Clear key to clear the count. If the count is accidentally cleared, pressing the interrupt key will undo the clear operation.
Enter the desired value from the 10-Key Pad.

<Clearing a Count>
Touch [Maintenance (Count)] and then press the Clear key to clear the count. If the count is accidentally cleared, pressing the interrupt key will undo the clear operation.
</td></tr>
</table>

(5) Function

- This function allows the Tech. Rep. to run the various function tests and make adjustments.

<Setting Procedure>
1. Touch [Function] to open the Function menu screen.
2. Select the particular function to be run.

Tech. Rep. Mode ▶ Function

Touch Panel Display	Operation
F1	<Paper Passage> A paper passage test is carried out after the copier has completed warming up. <Procedure> 1. Select the paper source key. (Touch [Duplex] to check for paper passage from the Duplex Unit.) ✻ If the paper source is not loaded with paper, an Add Paper mark appears at that source. 2. Press the Start key to start the test cycle. The test runs until the paper source runs out of paper. 3. If the Stop key is pressed, the copier feeds the current sheet of paper out before halting. (Another press of the Start key will resume the test cycle.)
F2	<HV Output Setting> Set the output of each HV. ✻ This function is only for factory setting and should never be used in the field.
F7-1	<Original Size Detecting Sensor Adjustment> Automatically adjusts the Original Size Detecting Sensors. <Procedure> 1. Stack five sheets of A3 or 11" × 17" paper on the Original Glass and lower the Original Cover. 2. Press the Start key to let the system start the adjustment sequence. ✻ The system automatically stops as soon as the adjustment sequence is completed. It can nonetheless be halted in mid-sequence with the Stop key, which, however, results in incorrect size detection as the adjustment sequence is incomplete.
F8	<ATDC Sensor Automatic Adjustment> Automatically makes the ATDC Sensor adjustment. <Procedure> Press the Start key to let the system start the adjustment sequence. ✻ The voltage automatically adjusted by this function is displayed for ATDC Sensor Gain of the Level History data.

Tech. Rep. Mode ▶ Function

Touch Panel Display	Operation
F12	<Test Pattern> Outputs a test pattern. ✻ If 2-sided is specified, the system outputs a test pattern in the 2-sided mode. <Procedure> 1. Touch the desired paper source key. (Touch [Duplex] for test pattern output on paper fed from the Duplex Unit.) ✻ If the paper source is not loaded with paper, an Add Paper mark appears at that source. 2. Press the Start key to start the output sequence. (It continues until the paper source runs out of paper.) 3. Press the Stop key to halt the sequence.

(6) I/O Check

- This function displays the details of inputs to each sensor.

<Setting Procedure>
1. Touch [I/O Check] to open the I/O Check menu screen.
2. Touch the desired subfunction key.

Tech. Rep. Mode ▶ I/O Check

Touch Panel Display	Operation
Scan-through ADF	
IR	***NOTE*** • *For details, see TROUBLESHOOTING.*
ADFR	
Output Option	
Printer	

(7) Movement Check

- This function runs a specified mechanism to check for operation.

<Setting Procedure>
1. Touch [Movement Check] to open the Movement Check menu screen.
2. Touch the desired subfunction.

Tech. Rep. Mode ▶ Movement Check

Touch Panel Display	Operation
ADF Paper Passage	Feeds paper through the ADF in the specified mode to check for correct operation. 1-sided No Detect | 1-sided Mixed Orig | 2-sided SADF <Procedure> 1. Select ADF Paper Passage. 2. Touch the desired mode key. 3. Load originals in the ADF. 4. Press the Start key to let the ADF start feeding originals. ✻ Pressing of the Start key temporarily stops the ADF. (Another press will let the ADF resume the sequence.) ✻ The sequence is completed when there is no more originals in the ADF; however, it is possible to halt the sequence in mid-operation by pressing the Stop key.
Scanner	• Drives the CCD. • Turns ON the Exposure Lamp. • Moves the Scanner according to the set value.
Exp. Lamp Check	Checks for the intensity of the Exposure Lamp light.

(8) RD Mode (SMART)

✻ “SMART” is displayed for the inch areas.

Tech. Rep. Mode ▶ RD Mode

Touch Panel Display	Setting
RD Mode	For making the initial settings of the copier for the Data Terminal.
ID Code	Enter a 7-digit ID code (0000001 to 9999999) from the 10-Key Pad to enable making the following settings. When the ID code is entered and transmitted after the initial settings have been made, it executes the transmission of MAINT. START to the Center. ✻ 0000000 is invalid.
Maintenance	Used to make the initial settings and various transmissions.
DT Setting	Enter the following data.
CT-ID (Password)	Using the 10-Key Pad, enter the 4-digit ID number (0001 to 9999) of the Center which has been programmed in the Center personal computer. ✻ 0000 is invalid.
DT-ID	Using the 10-Key Pad, enter the 6-digit ID number (000001 to 999999) of the Data Terminal. ✻ 000000 is invalid.
TEL No.	Enter the 19-or-less-digit phone number of the modem connected to the Center personal computer from the 10-Key Pad. ✻ In addition to the 10-Key Pad and Clear key, use the following keys to enter the phone number. Interrupt key: For a pause (3 sec. or more), “-” Pause key: For a pause (3 sec. or more), “-” P key: For a “pulse” dialing, “P” T key: For a “tone” dialing, “T” W key: For a wait code (waiting for a signal from the other party), “W” ✻ key: For an ISDN subaddress, “✻” # key: For switching from the extension line to outside line, or vice versa, “#”
Initial Transmission	Used to perform the initial transmission from the copier to the Center to check for correct communication when the Data Terminal has been set up.
Counter Clear	Used to clear the count of the spare counter set by the Center. <Procedure> 1. Touch [Counter Clear] to open the Counter Clear screen. 2. Touch the number assigned to the counter to be cleared.
Call Completion	Used by the Tech. Rep. to notify the Center that his/her service job for the copier has been completed.

Touch Panel Display	Setting (The default is **Highlighted**).
RD Mode	———
RAM Clear	Reinitializes the Data Terminal. YES / **NO**
Common DT	Set the following functions.
Dial Mode	Select the type of telephone line of the user. **Tone** / Pulse
Auto Receive	Choose “Yes” or “No” for the auto reception function. **YES** / NO ✻ Select “Yes” if the line is dedicated to the Data Terminal.
Result Code	Enter the result code for connection to the modem when the line is connected. (0 to 999)

(9) ROM Version

Tech. Rep. Mode ▶ ROM Version

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>ROM Version</td><td>Displays the current ROM version information.
✻ No version information is displayed for a machine that is not connected to the system.
<Procedure>
1. Touch [ROM Version] to open the ROM Version screen.
2. The screen shows the ROM version information of various machines configured in the system.
<table>
<tr><th colspan="2">Display</th><th>Description</th></tr>
<tr><td>MSC</td><td>—</td><td>MFB Board</td></tr>
<tr><td>Message</td><td>IC4</td><td>MFB Board</td></tr>
<tr><td>Printer</td><td>IC1</td><td>Master Board</td></tr>
<tr><td>ADFR</td><td>IC3</td><td>ADFR Board</td></tr>
<tr><td>LCC</td><td>IC7</td><td>LCC Board</td></tr>
<tr><td>Finisher</td><td>IC3</td><td>Finisher/Job Tray Board</td></tr>
<tr><td>IIF</td><td>—</td><td>IIF2 Board</td></tr>
</table>
</td></tr>
</table>

(10) Level History

- This function is used to show the various level histories which are changed according to the operating conditions of the copier and user requirements.

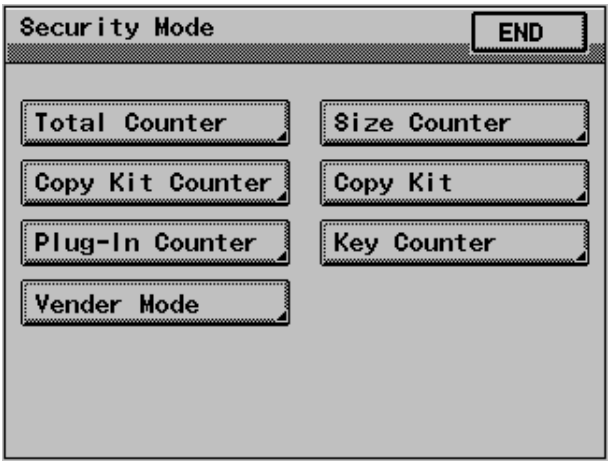
Tech. Rep. Mode ▶ Level History

<table>
<tr><th>Touch Panel Display</th><th>Setting</th></tr>
<tr><td>Level History</td><td>
<ATDC Set>
Shows the voltage set by ATDC Sensor Automatic Adjustment (F8).
✻ The Level History data is updated when the ATDC Sensor Automatic Adjustment (F8) is completed.
<table>
<tr><th>Variable Range</th><th>Increments</th></tr>
<tr><td>123 to 186 (steps)</td><td>1 Step</td></tr>
</table>
<ATDC Current>
Shows the current, approximate ATDC Sensor T/C setting in percentage.
<table>
<tr><th>Variable Range</th><th>Increments</th></tr>
<tr><td>3.0 to 19.0 (%)</td><td>0.5%</td></tr>
</table>
<Vg Current>
Displays the grid voltage as corrected through image stabilization and related functions.
<table>
<tr><th>Variable Range</th><th>Increments</th></tr>
<tr><td>-514 to -728 (V)</td><td>-</td></tr>
</table>
<Vb Current>
Displays the developing bias voltage as corrected through image stabilization and related function.
<table>
<tr><th>Variable Range</th><th>Increments</th></tr>
<tr><td>-409 to -623 (V)</td><td>-</td></tr>
</table>
</td></tr>
</table>

6 SECURITY MODE

- This function allows the Tech. Rep. to make various settings.

6-1. Security Mode Menu Screen



1167S011CA

6-2. Security Mode Function Setting Procedure

<Setting Procedure>

1. Set the copier into the Tech. Rep. mode by one of the following methods:
   A. With the copier turned ON, press the Tech. Rep. Setting Switch.
   B. With the Meter Count screen opened from Utility, press the following keys in this order:

   Stop Key ➡ 0 ➡ 0 ➡ Stop Key ➡ 0 ➡ 1

2. Enter the Security mode by pressing the following keys in this order:

   Stop Key ➡ 9

3. Select the particular Security mode to be set.
4. Make the necessary settings by following the instructions given sequentially on the screen.

✻ The Function selected is highlighted.

<Exiting the Mode>

Perform any one of the following steps to go back to the Basic screen.

- Press the Panel Reset key and Touch [Exit] on the Tech. Rep. Mode screen.
- Touch [END] on the Security Mode screen. Then touch [Exit] on the Tech. Rep. Mode screen.

6-3. Settings in the Security Mode

Tech. Rep. Mode ▶ Security Mode

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Total Counter</td><td>Select the conditions by which the Total Counter count is increased.
<table>
<tr><td>Mode 1</td><td>1 count per 1 copy cycle (normal mode)</td></tr>
<tr><td>Mode 2</td><td>Multiple count-up according to paper size and 1/2-sided copying</td></tr>
<tr><td>Mode 3</td><td>Multiple count-up according to paper size and 1/2-sided copying</td></tr>
</table>
✻ See the Count-up Table for details.</td></tr>
<tr><td>Size Counter</td><td>Select the size of the paper to be counted by the Size Counter.
<table>
<tr><td>No Count</td><td>A3
11×17</td><td>A3 / B4
11×17
Legal</td><td>A3 /11×17
B4 /11×14
FLS/Legal</td><td>A6</td></tr>
</table>
✻ See the Count-up Table for details.</td></tr>
<tr><td>Copy Kit</td><td>• Allows for setting the desired threshold before the Maintenance Call reminder is given.
• Displays both the current value and the above setting value. Each counter can also be reset independently of the other.
• When the current value (Current) becomes the setting value (Set), the icon “⚠” appears in the Status Display if “Mode 2” is selected for “Copy Kit Counter” and the Maintenance Call reminder (M4) is displayed if “Mode 3” is selected for “Copy Kit Counter.”
✻ Whether the initiation of a new copy cycle is inhibited or not when the current value exceeds the setting value depends on the setting made with Copy Kit Counter.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Set</td><td>Gives a Maintenance Call when Current value reaches Set value.</td></tr>
<tr><td>Current</td><td>Counts up for each copy made.</td></tr>
</table>
<Counter Setting Procedure>
1. Touch [Set] and press the Clear key to clear the current setting. If the setting is accidentally cleared, pressing of the Interrupt key will undo the clear operation.
2. Enter the desired value from the 10-Key Pad.
<Clearing the Count>
Touch [Current] and press the Clear key to clear the count. If the count is accidentally cleared, pressing of the Interrupt key will undo the clear operation.</td></tr>
</table>

<table>
<tr><td>Touch Panel Display</td><td>Setting (The default is Highlighted).</td></tr>
<tr><td>Copy Kit Counter</td><td>Select whether to set the count or not for the Copy Kit Counter and select whether to inhibit the initiation of a new copy cycle or not when the Current value reaches Set value.
<table><tr><td>Mode 1</td><td>No counting</td></tr><tr><td>Mode 2</td><td>Counted and permits copying even when the Set value is reached.</td></tr><tr><td>Mode 3</td><td>Counted and inhibits copying when the Set value is reached.</td></tr></table></td></tr>
<tr><td>Plug-In Counter</td><td>Select the condition by which the Key Counter count is increased.
<table><tr><td>Copies Made</td><td>Copy Cycles</td></tr></table>✻ See the Count-up Table for details.</td></tr>
<tr><td>Key Counter</td><td>Set whether a Key Counter is plugged in (“ON”) or not (“OFF”).
<table><tr><td>ON</td><td>OFF</td></tr></table></td></tr>
<tr><td>Vender Mode</td><td>Select the medium to be used when the Key Counter or Vender is used.
✻ This function is not valid if “OFF” is selected for “Key Counter.”
<table><tr><td>OFF</td><td>Coin</td><td>Card</td></tr></table></td></tr>
</table>

<Count-up Table>

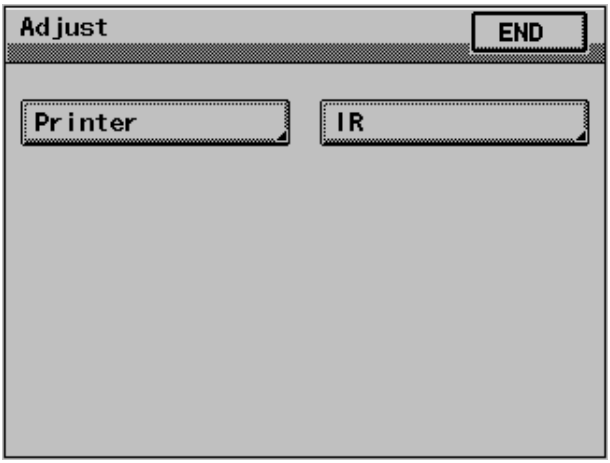
Copying		1-Sided						2-Sided					
Size		Size other than those set			Set size			Size other than those set			Set size		
Total		Mode			Mode			Mode			Mode		
		1	2	3	1	2	3	1	2	3	1	2	3
Total (mechanical, electronic)		1			1	2	2	2			2	4	4
Size (electronic)		0			1	1	2	0			2	2	0
2-Sided Total (electronic)		0			0			1	1	2	1	1	4
2-Sided Size (electronic)		0			0			0			1	1	4
Total by account		1			1	2	2	2			2	4	4
Size by account		0			1	1	2	0			2	2	4
Key (mechanical)	Counting copies	1			1	2	2	1	2	2	1	4	4
	Counting copy cycles	1			1	2	2	2			2	4	4

0: No count 1: 1 count 2: 2 counts 3: 3 counts 4: 4 counts

7 ADJUST MODE

- Adjust mode is for adjustments to be made before shipment at the factory. As a rule, use this mode only when MFB Board UN2, or EEPROM (IC3A) on Master Board PWB-A has been replaced with a new one.

7-1. Adjust Mode Menu Screen



1167S012CA

7-2. Adjust Mode Function Setting Procedure

<Setting Procedure>

1. Set the copier into the Tech. Rep. mode by the following method:

- With the Meter Count screen opened from Utility, press the following keys in this order.

[Stop Key] ➡ [0] ➡ [0] ➡ [Stop Key] ➡ [0] ➡ [1]

2. Enter the Adjust mode by pressing the following keys in this order:

[Stop Key] ➡ [Start Key]

3. Select the particular Adjust mode function to be set.
4. Make the necessary settings by following the instructions given sequentially on the screen.

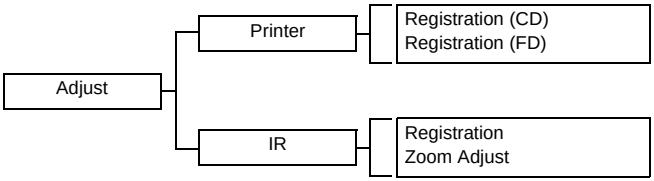
✻ The function selected is highlighted.

<Exiting the Mode>

Perform any one of the following steps to go back to the Basic screen.

- Press the Panel Reset key and Touch [Exit] on the Tech. Rep. Mode screen.
- Touch [END] on the Adjust mode screen. Then touch [Exit] on the Tech. Rep. Mode screen.

7-3. Adjust Mode Function Tree



7-4. Settings in the Adjust Mode

(1) Printer

- This function is used to enter the adjustment values as they relate to the printer.

<Setting Procedure>
1. Touch [Printer] to open the Printer screen.
2. Select the desired subfunction.

Tech. Rep. Mode ▶ Adjust

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Registration (CD)</td><td>Adjust registration of the printer in the main scanning direction.
<table><tr><td>1st Drawer</td><td rowspan="3">-4.0mm..... 0 .....+4.0mm</td></tr><tr><td>2nd Drawer</td></tr><tr><td>3rd Drawer</td></tr><tr><td>4th Drawer</td><td rowspan="3">Advanced timing ◄——► Retarded timing</td></tr><tr><td>5th Drawer</td></tr><tr><td>Duplex</td></tr></table>✻ Adjust “Duplex” after adjustments have been completed for all drawers.</td></tr>
<tr><td>Registration (FD)</td><td>Adjust registration of the printer in the sub-scanning direction.
<table><tr><td>-26..... 0 .....+26</td></tr><tr><td>Advanced timing ◄——► Retarded timing</td></tr></table></td></tr>
</table>

(2) IR

- This function is used to enter the adjustment values as they relate to the IR.

<Setting Procedure>
1. Touch [IR] to open the IR screen.
2. Select the desired subfunction.

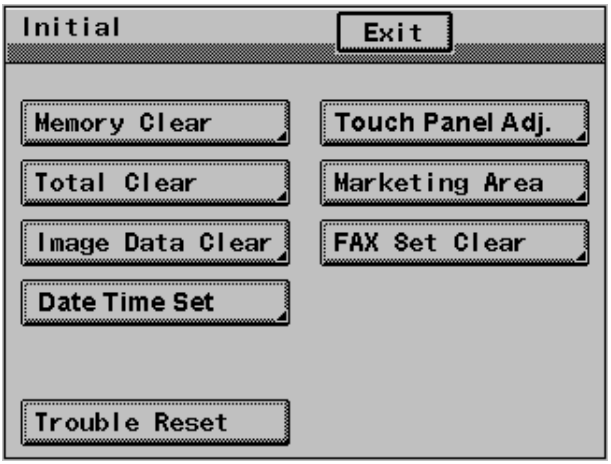
Tech. Rep. Mode ▶ Adjust

Touch Panel Display	Setting (The default is **Highlighted**).
Registration	Adjust registration of the Scanner in the main and sub-scanning directions. -127 dot.....**0**.....+127 dot Smaller ◄——► Greater
Zoom Adjust	Adjust the scanning zoom ratio of the Scanner in the main and sub-scanning directions. 0.990.....**1.000**.....1.010 Smaller ◄——► Greater

8 INITIAL MODE

- Initial mode is used to initialize the various service functions.

8-1. Initial Mode Menu Screen



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8-2. Initial Mode Function Setting Procedure

<Setting Procedure>

1. Enter the Initial mode by pressing the following keys in this order:

   Warm Restart Switch ON ➡ Enter “3” from the 10-Key Pad when “.” appears at the center on the left side of the screen while the start-up screen is being displayed.

2. Select the particular Initial mode function to be set.
3. Make the necessary settings by following the instructions given sequentially on the screen.

✻ The function selected is highlighted.

<Exiting the Mode>

- Touch [Exit] on the Initial mode screen to go back to the Basic screen.

8-3. Settings in the Initial Mode

Tech. Rep. Mode ▶ Initial

Touch Panel Display	Setting (The default is **Highlighted**).
Memory Clear	Clears all data except the electronic counters, Adjust, Copy Track-related, and DT-related settings. Yes / **NO**
Touch Panel Adj.	Corrects deviation in the sensitive area of the Touch Panel. <Procedure> Sequentially touch the four points marked with + on the screen as instructed by the arrow.
Total Clear	Clears all of the electronic counters and Copy Track-related data. Yes / **NO**
Marketing Area	Selects the settings for the fixed zoom ratios, paper sizes, and others according to the marketing area. **MJ** / MC / MH / Others
Image Data Clear	Clears the image data stored in file memory of the MFB Board. Yes / **NO**
FAX Set Clear	Clears the fax-related settings. ✻ Two or more items can be selected. Own Setting / The Address / Transmission Manage / Soft Switch — Yes / **NO**
Date Time Set	Sets the time-of-day and date.
Trouble Reset	Resets all malfunctions including the Fusing ones (C05XX). ✻ Malfunctions other than Fusing ones can be reset by turning OFF and ON the Power Switch and opening and closing the Side Cover.

Di250

DIS/REASSEMBLY, ADJUSTMENT

MINOLTA

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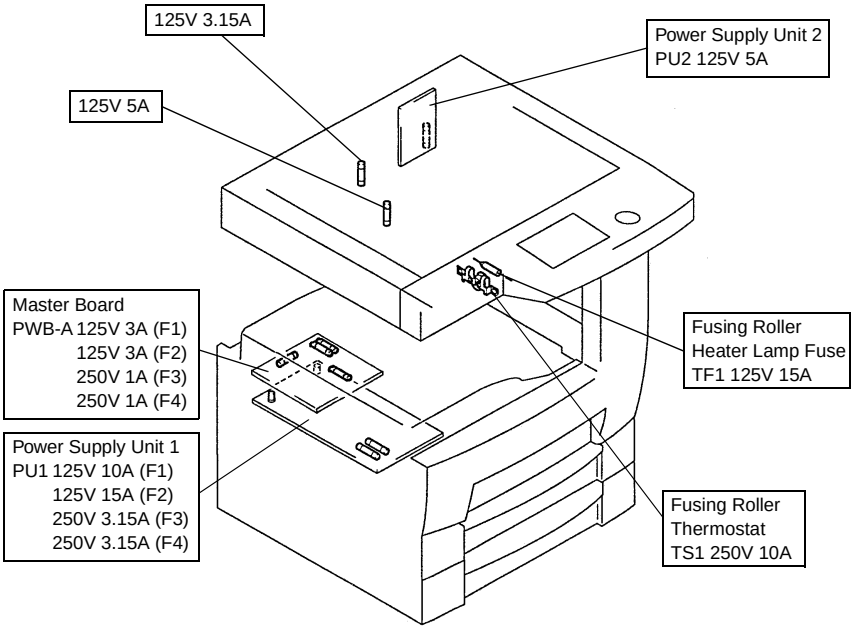
1 SERVICE INSTRUCTIONS

1-1. IDENTIFICATION OF FUSES AND CIRCUIT BREAKERS



1-2. PRECAUTIONS FOR HANDLING THE LASER EQUIPMENT

- The laser used in this copier is a semiconductor laser having the following specifications.

Max. power:	5mW
Output wavelength:	770~80nm

- When laser protective goggles are to be used, select ones with a lens conforming to the above specifications.
- When a disassembly job needs to be performed in the laser beam path, such as when working around the printerhead and PC Drum, be sure first to turn the copier OFF.
- If the job requires that the copier be left ON, take off your watch and ring and wear laser protective goggles.
- A highly reflective tool can be dangerous if it is brought into the laser beam path. Use utmost care when handling tools on the user's premises.
- The printerhead is not maintainable in the field. It is to be replaced as an assembly including the control board. Never, therefore, attempt to remove the laser diode or adjust trimmers on the control board.

1-3. INSTRUCTIONS FOR HANDLING THE PWBs WITH MOS ICs

The following precautions must be observed when handling P.W. Boards with MOS (Metal Oxide Semiconductor) ICs.

During Transportation/Storage:

- During transportation or when in storage, new P.W. Boards must not be indiscriminately removed from their protective conductive bags.
- Do not store or place P.W. Boards in a location exposed to direct sunlight.
- When it becomes absolutely necessary to remove a Board from its conductive bag or case, always place it on its conductive mat in an area as free as possible from static electricity.
- Do not touch the pins of the ICs with your bare hands.

During Replacement:

- Before unplugging connectors from the P.W. Boards, make sure that the power cord has been unplugged from the outlet.
- When removing a Board from its conductive bag or conductive case, do not touch the pins of the ICs or the printed pattern. Place it in position by holding only the edges of the Board.
- Before plugging connectors into the Board, make sure that the power cord has been unplugged from the power outlet.

During Inspection:

- Avoid checking the IC directly with a multimeter; use connectors on the Board.
- Never create a closed circuit across IC pins with a metal tool.
- When it is absolutely necessary to touch the ICs and other electrical components on the PW Board, be sure to ground your body.

1-4. HANDLING OF THE IMAGING CARTRIDGE

During Transportation/Storage:

- Use the specified carton whenever moving or storing the Imaging Cartridge.
- The storage temperature is in the range between –20°C and +40°C.
- In summer, avoid leaving the Imaging Cartridge in a car for a long time.

Handling:

- Ensure that the correct Imaging Cartridge is used.
- Store the Imaging Cartridge in a site that is not exposed to direct sunlight.

Precautionary Information on the PC Drum Inside the Imaging Cartridge:

- The PC Drum exhibits greatest light fatigue after being exposed to strong light over an extended period of time. Never, therefore, expose it to direct sunlight.
- Use care not to contaminate the surface of the PC Drum with oil-base solvent, fingerprints, and other foreign matter.
- Do not scratch the surface of the PC Drum.
- Do not apply chemicals to the surface of the PC Drum.
- Do not attempt to wipe clean the surface of the PC Drum.

1-5. PARTS WHICH MUST NOT BE TOUCHED

(1) Red painted Screws

Purpose of Application of Red Paint
Red painted screws show that the assembly or unit secured can only be adjusted or set at the factory and should not be readjusted, set, or removed in the field.

Note that when two or more screws are used on the part in questions, only one representative screw may be marked with red paint.

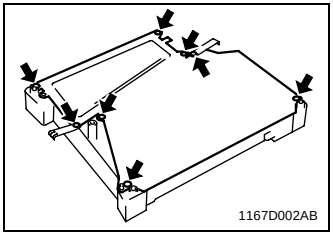
(2) Variable Resistors on Board

Do not turn the variable resistors on boards for which no adjusting instructions are given in "ADJUSTMENT."

(3) Other Screws

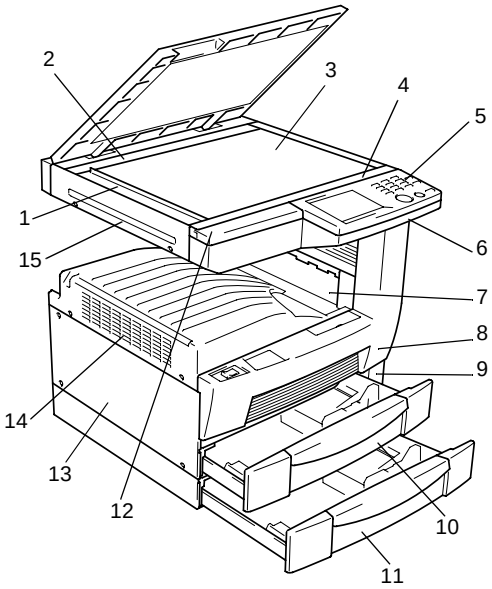
Although not marked with red paint, the following screws must not be loosened or readjusted.

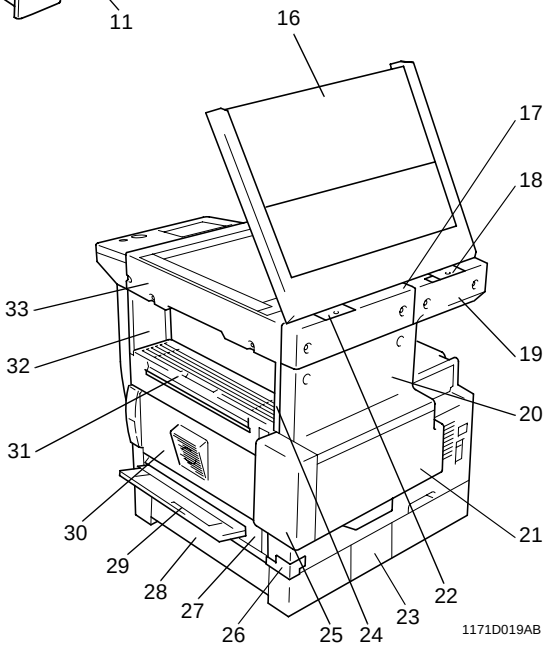
8 screws on the PH Unit Cover



2 DISASSEMBLY/REASSEMBLY

2-1. DOORS, COVERS, AND EXTERIOR PARTS: IDENTIFICATION AND REMOVAL PROCEDURES



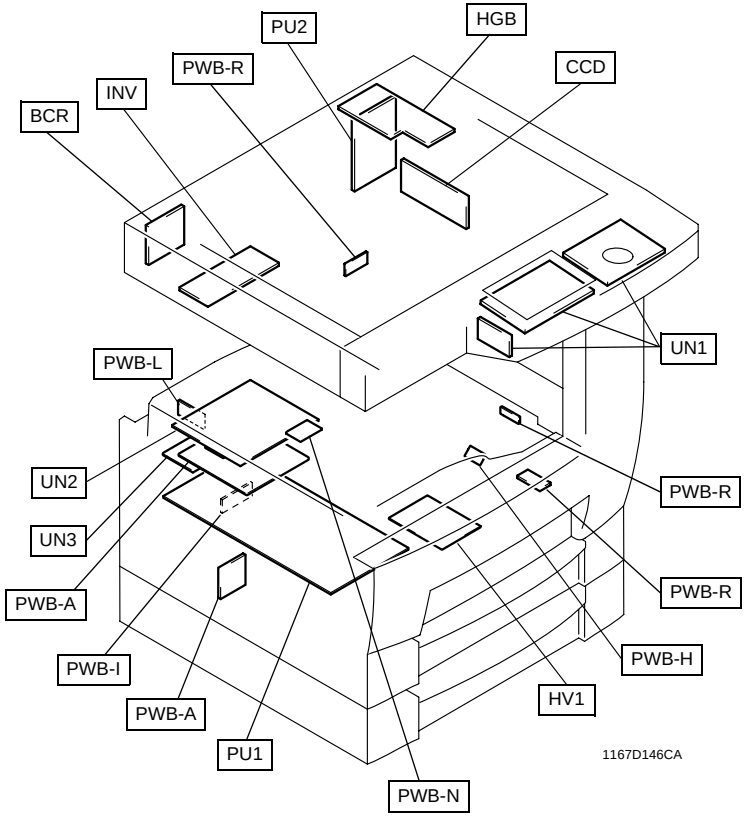


No.	Part Name	Removal Procedure
1	ADF Glass Assy.	Remove No. 2, 4. → Remove two holding brackets. → Remove two screw caps. → Remove two screws that secure the ADF Glass Assy.
2	Rear Holding Bracket	Remove No. 17, 18. → Remove two screw caps. → Remove two screws that secure the Rear Holding Bracket.
3	Original Glass	Remove No. 4. → Remove two holding brackets.
4	Front Holding Bracket	Remove two screw caps. → Remove two screws that secure the Front Holding Bracket.
5	Control Panel	Remove No. 8. → Remove No. 6. → Remove No. 4. → Remove No. 12. → Remove five screws that secure the control panel and unplug one connector.
6	Front Upper Cover	Remove No. 8. → Remove No. 12. → Remove six screws that secure the Front Upper Cover.
7	Exit Lower Cover	Remove No. 32. → Remove No. 24. → Unhook the two tabs of the Exit Lower Cover and remove the Exit Lower Cover.
8	Front Cover	Slide out No. 10. → Open No. 25. → Remove three screws that secure the Front Cover.
9	LED Cover	Slide out No. 10. → Remove one screw that secure the LED Cover.
10	MP Cassette	Slide out the MP Cassette. → Pushing the tab on the right rail, pull out the cassette.
11	500-Sheet Cassette	Slide out the 500-Sheet Cassette. → Pushing the tabs on both the right and left rails, pull out the cassette.
12	Upper Front Left Cover	Remove No. 4. → Remove two screws that secure the Upper Front Left Cover.
13	Left Cover	Remove six screws that secure the Left Cover.
14	Upper Cover	Remove two screws that secure the Upper Cover.
15	Left IR Cover	Remove two screws that secure the Left IR Cover.
16	Original Cover	———
17	Rear Right IR Cover	Remove No. 22. → Remove No. 19. → Remove two screws that secure the Rear Right IR Cover.
18	Left Hinge Cover	Remove one screw that secure the Left Hinge Cover.
19	Rear Left IR Cover	Remove No. 17. → Remove two screws that secure the Rear Left IR Cover.
20	Rear Upper Cover	Remove No. 21. → Remove No. 17. → Remove No. 19. → Remove four screws that secure Rear Upper Cover.
21	Rear Lower Cover	Remove No. 26. → Remove No. 25. → Open No. 30. → Open No. 31. → Remove five screws that secure the Rear Lower Cover.
22	Right Hinge Cover	Remove one screw that secure the Right Hinge Cover.
23	Connector Cover	Remove one screw that secure the Connector Cover.
24	Rear Inside Cover	Remove No. 22. → Remove three screws that secure the Rear Inside Cover.

No.	Part Name	Removal Procedure
25	Toner Bottle Cover	Open the Toner Bottle Cover. → Unhook the dowels at four places of the Toner Bottle Cover.
26	Harness Cover	Remove one screw that secure the Harness Cover.
27	Right Lower Cover	Remove one screw that secure the Right Lower Cover.
28	500-Sheet Cassette Side Cover	Open the Side Cover. → Slide the Side Cover to the front and, at the same time, pull the rear side out of the frame.
29	Manual Bypass Tray	Remove No. 26. → Unplug one connector. → Remove three screws that secure the Manual Bypass Tray.
30	Side Cover	———
31	Fusing Unit	See D-26.
32	Front Inside Cover	Remove No. 8. → Remove No. 31. → Remove two screws that secure the Front Inside Cover.
33	Right IR Cover	Remove three screws that secure the Right IR Cover.

2-2. REMOVAL OF CIRCUIT BOARDS AND OTHER ELECTRICAL COMPOMENTS

- When removing a circuit board or other electrical component, refer to “PRECAUTIONS FOR HANDLING THE PWBs” contained in SWITCHES ON PWBs and follow the corresponding removal procedures.
- The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.
- Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.

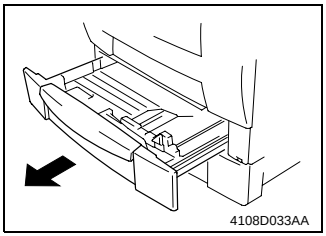


Symbol	Part Name	Removal Procedure
PWB-A	Master Board	Remove the Upper Cover. → Remove nine screws and the MFB Box Cover. → Remove two screws and the MFB Box Assy. → PWB-A
PWB-A	Cassette Main Board	Remove the Connector Cover. → PWB-A
PWB-H	Double Feed Detecting Board	Slide out the MP Cassette. → Remove one screw and the PWB-H Mounting Bracket Assy. → PWB-H
PWB-I	Paper Size Detecting Board	Remove the Harness Cover. → Remove the Rear Cover. → Remove two screws and the PW Board Cover. → PWB-I
PWB-L	PPM Switching Board	Remove the Harness Cover. → Remove the Rear Cover. → Remove one screw and the PWB-L Mounting Bracket Assy. → PWB-L
PWB-N	RAM Board	Remove the Upper Cover. → Remove nine screws and the MFB Box Cover. → PWB-N
PWB-R	Fuser Frame Register Board	Remove the Fusing Unit. → Remove the rear lamp cover. → PWB-R
PWB-R	Pre-Transfer Guide Plate Register Board 1	Remove the Vertical Transport Unit. → Remove two screws and two ground plates. → PWB-R
PWB-R	Pre-Transfer Guide Plate Register Board 2	Open the Side Cover. → Remove the Imaging Cartridge. → Remove one screw and the PW Board Cover. → PWB-R
PU1	Power Supply Board 1	Remove the Harness Cover. → Remove the Rear Cover. → Remove the Left Cover. → Remove five screws and the Reinforcement Bracket. → Remove three screws and the PU1 Mounting Bracket Assy. → PU1
PU2	Power Supply Board 2	Remove the Harness Cover. → Remove the Rear Cover. → PU2
HV1	High Voltage Unit	Open the Side Cover. → Remove the Imaging Cartridge. → Remove two screws and the HV1 Cover. → HV1
INV	Inverter Board	Remove the Original Glass. → INV
BCR	BCR Board	Remove the Rear Left IR Cover. → Remove three screws and the Harness Cover. → BCR
HGB	HGB Board	Remove the Original Glass. → Remove the Right IR Cover. → Remove the Optical Cover. → Remove the Rear Lower Cover. → Remove the Rear Upper Cover. → Remove the Shielding Plate. (U.S.A. and Canada only) → Remove one screw and the Harness Cover. → Unplug nine connectors. → Remove five screws and the HGB Mounting Bracket Assy. → HGB
CCD	CCD Board	See D-15.

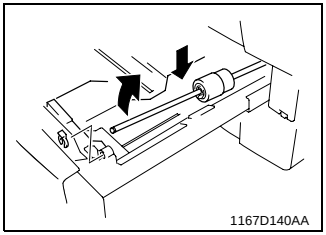
Symbol	Part Name	Removal Procedure
UN2	MFB Board	Remove the Upper Cover. → Remove nine screws and the MFB Box Cover. → UN2
UN3	Polygon Motor Drive Board	Remove the PH Unit. → UN3

2-3. PAPER TAKE-UP/TRANSPORT SECTION

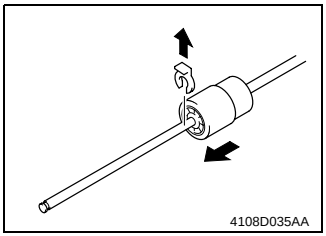
(1) Replacement of the Paper Take-Up Roll



1. Slide out the MP Cassette.

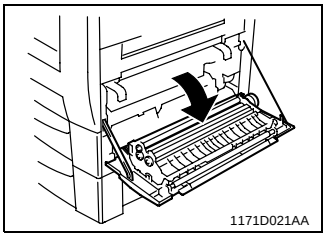


2. Lock the Paper Lifting Plate.
3. Snap off one C-clip of the Paper Take-Up Roll Assy.
4. Slide the Paper Take-Up Roll Assy to the rear so that it can be pulled off the bushing at the front.

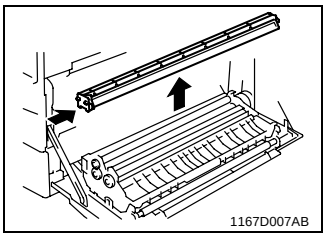


5. Snap off one C-clip and remove and replace the Paper Take-Up Roll.

(2) Replacement of the Paper Dust Remover

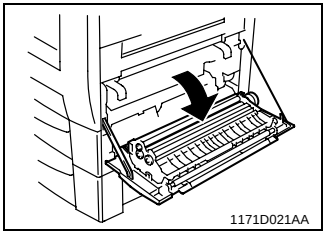


1. Open the Side Cover.

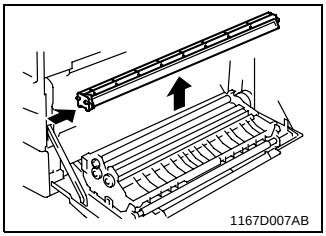


2. Remove the Paper Dust Remover and replace it.

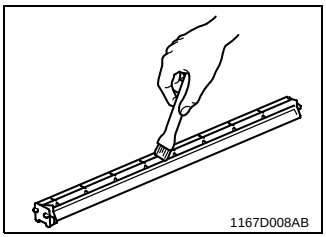
(3) Cleaning of the Paper Dust Remover



1. Open the Side Cover.

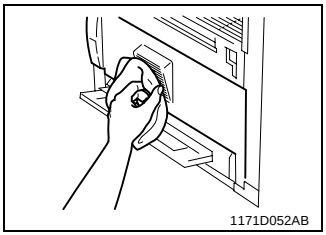


2. Remove the Paper Dust Remover.



3. Using a brush, whisk dust and dirt off the Paper Dust Remover.

(4) Cleaning of the Side Cover

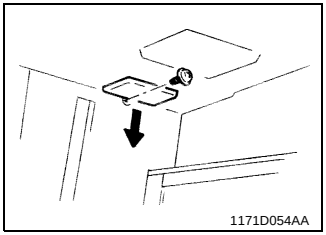


Using a soft cloth dampened with alcohol, wipe the Side Cover.

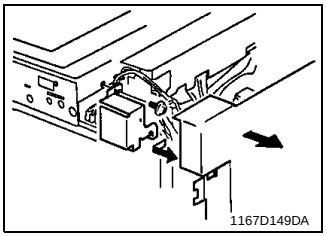
2-4. OPTICAL SECTION

(1) Removal of the IR Unit

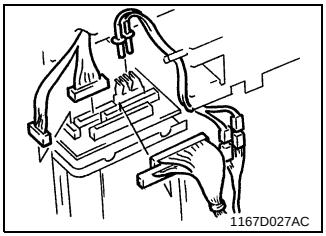
1. Remove the Original Cover, Front Holding Bracket, Upper Front Left Cover, Front Cover, Front Upper Cover, Rear Right IR Cover, Rear Left IR Cover, Rear Lower Cover, Rear Upper Cover, and Front Inside Cover.



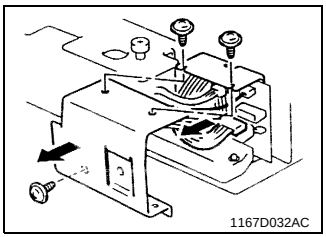
2. Remove one screw and the Motor Cover.



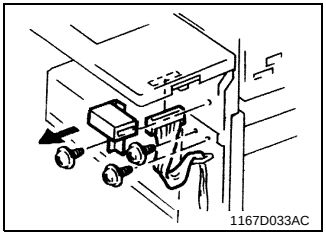
3. Remove the Shielding Plate. (U.S.A. and Canada only)
4. Remove one screw and the Harness Cover.



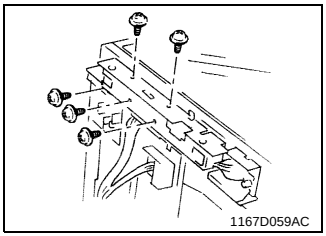
5. Unplug eight connectors of the HGB Board.



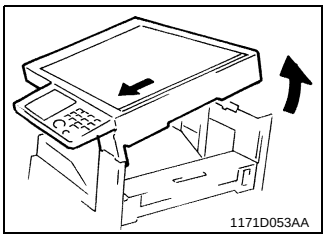
6. Remove three screws and the Harness Cover.
7. Unplug one connector of the BCR Board.



8. Remove one screw and the Total Counter Mounting Bracket Assy.
9. Unplug one connector of the Control Panel.
10. Remove two screws that secure the front end of the frame.



11. Remove five screws that secure the rear end of the frame.

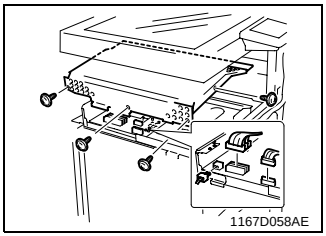


12. Raise the rear end of the IR Unit and pull the unit out toward front.

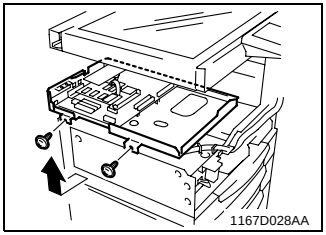
(2) Removal of the PH Unit

NOTES

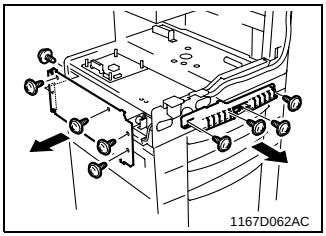
- *Do not place the PH Unit upside down or subject it to excessive shock.*
- *Replace the PH Unit as one unit.*
- *NEVER attempt to disassemble or adjust the PH Unit.*
- *Whenever the PH Unit has been removed, make the following adjustments: Edge Erase, Registration (CD, FD) (Printer), Registration (IR).*



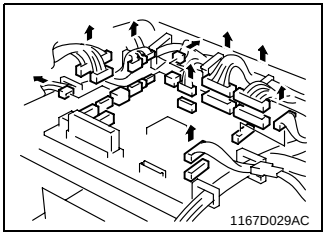
1. Remove the Upper Cover, Front Cover, Left Cover, and Rear Cover.
2. Remove four screws and the MFB Box Cover.
3. Unplug five connectors of the MFB Board.



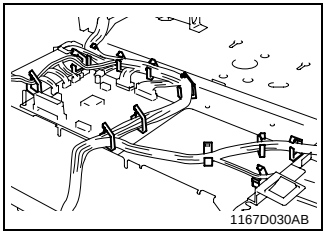
4. Remove two screws and the MFB Box Assy.



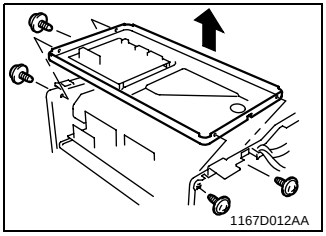
5. Remove five screws and the Reinforcement Bracket.
6. Remove four screws and the handle.



7. Unplug all connectors (13) from Master Board PWB-A.

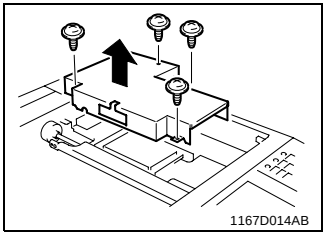


8. Remove the harness from all cord clamps (12) on the PH Base Plate.



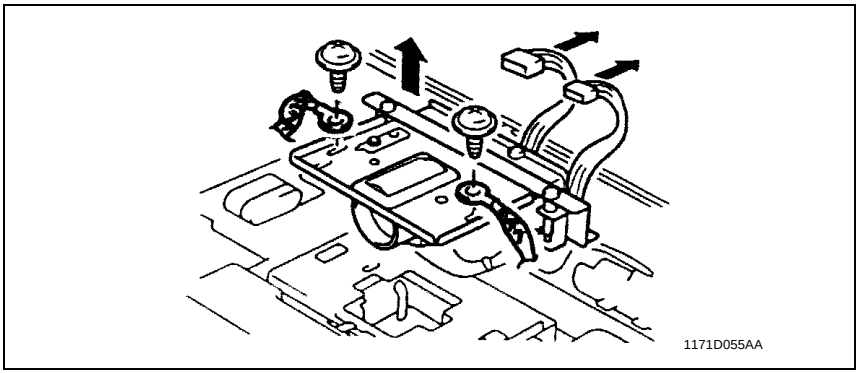
9. Remove four screws and the PH Unit.

(3) Removal of the CCD Unit



1. Remove the Original Glass.
2. Remove four screws and the Cover.

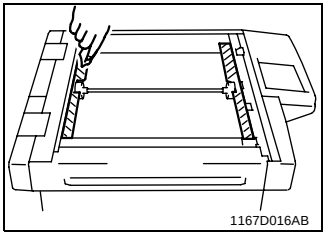
3. Unplug two connectors of the CCD Unit.
4. Remove two screws and the CCD Unit.



NOTES

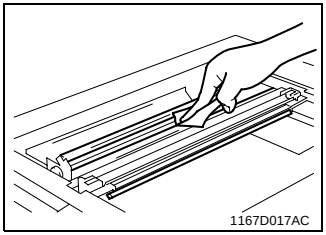
1. When removing the CCD Unit, remove only those screws and parts that are specified. (Remove the CCD Unit as one unit.)
2. Whenever the CCD Unit has been replaced, make the following adjustment: FD of Zoom Adjust (IR).

(4) Cleaning of the Scanner Rails/Bushings



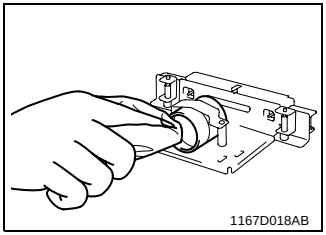
1. Remove the Original Glass.
2. Using a soft cloth, wipe clean the Scanner Rails and Bushings.

(5) Cleaning of the Mirrors



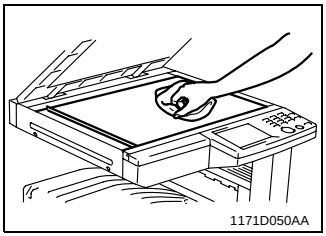
1. Remove the Original Glass.
2. Wipe clean the Mirrors with a soft cloth.

(6) Cleaning of the Lens



1. Remove the CCD Unit.
2. Wipe clean the Lens with a soft cloth.

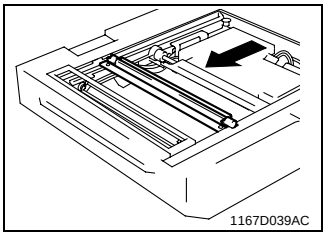
(7) Cleaning of the Original Glass



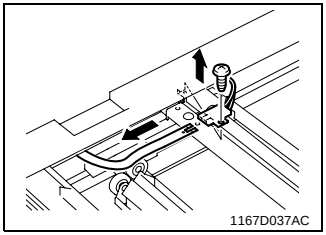
Wipe clean the Original Glass with a soft cloth.

(8) Removal of the Scanner

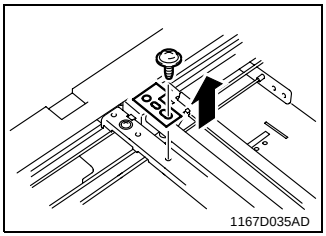
1. Remove the Original Glass.
2. Remove the Rear Holding Bracket.



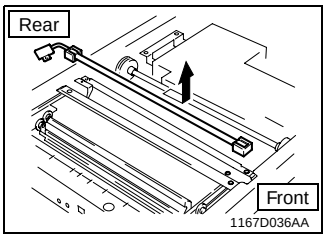
3. Slide the Scanner to the position shown.



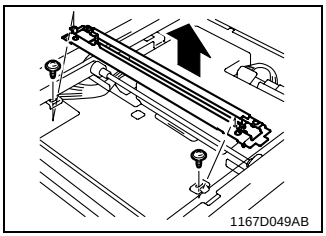
4. Remove one screw and unplug the connector of the Exposure Lamp.
5. Remove the flat cable of the Exposure Lamp.



6. Remove one screw and the Lamp Fixing Bracket.



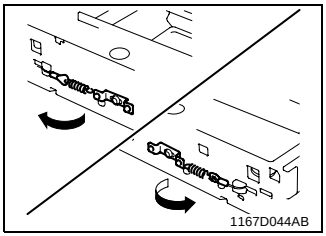
7. Slide the Exposure Lamp to the front and remove it.



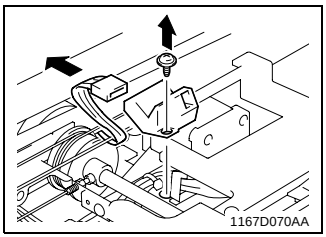
8. Remove two screws and the Scanner.

(9) Removal of the Scanner Drive Cables

1. Remove the Original Glass and ADF Glass Assy.
2. Remove the Left IR Cover.
3. Remove the Scanner.

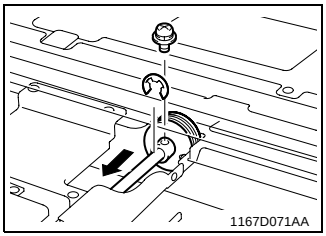


4. Unhook the spring of the cable on the hook side, one each at the front and in the rear.

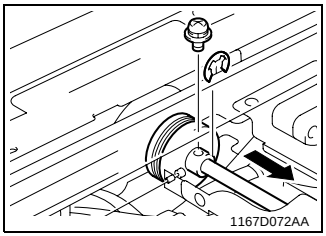


5. Remove one screw and the Original Size Detection Sensor.

✻ Inch Areas Option.



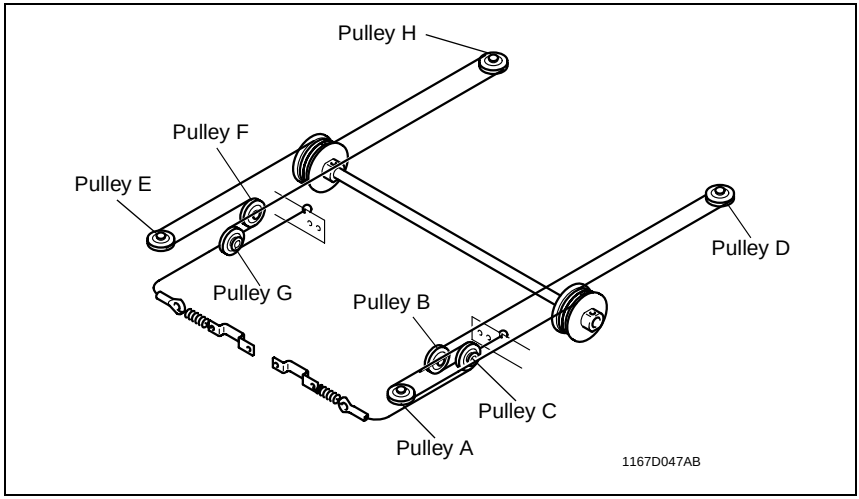
6. Snap off one E-ring and remove one mounting screw from the front pulley and slide the pulley to the rear.

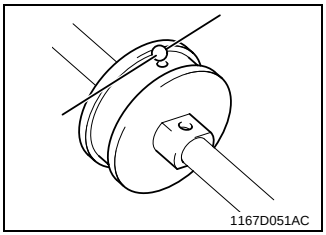


7. Snap off one E-ring and remove one mounting screw from the rear pulley and slide the pulley to the front.

8. Remove the Scanner Drive Cable, hook end first.

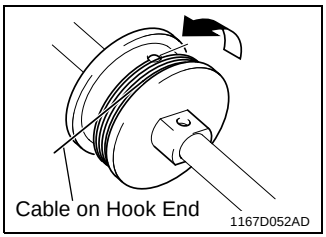
(10) Winding of the Scanner Drive Cables



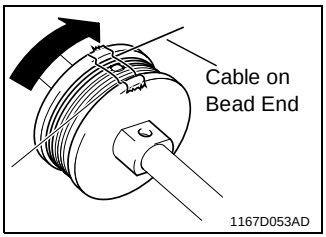


Front

1. Position the round bead of the Scanner Drive Cable in the pulley as shown.



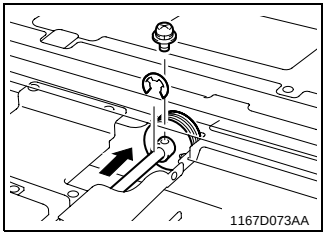
2. Wind the hook end of the Scanner Drive Cable two turns counterclockwise from the rear side to the front.



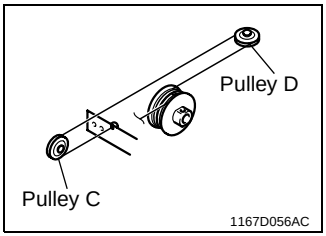
3. Wind the bead end of the cable four turns clockwise from the front to the rear. Then, secure the cable with tape.

NOTE

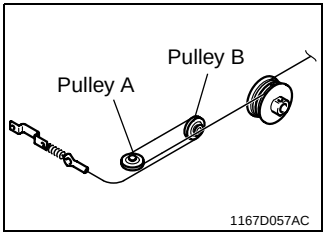
Make sure that no part of the cable rides on the other.



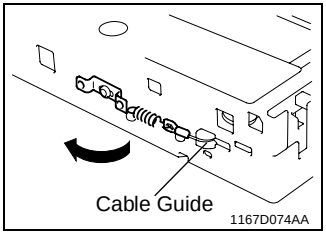
4. Slide the pulley to the front and install one mounting screw and one E-ring.



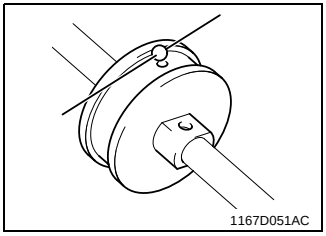
5. Wind the bead end of the cable around pulley D and pulley C, then hook the bead onto the Adjustable Anchor.



6. Wind the hook end of the cable around pulley A and pulley B.

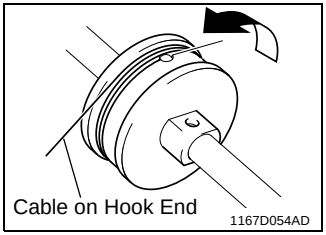


7. Fit the hook end of the cable into the groove in the Cable Guide and hook the spring.

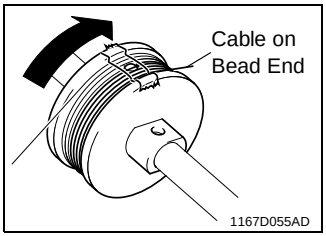


Rear

8. Position the round bead of the Scanner Drive Cable in the pulley as shown.

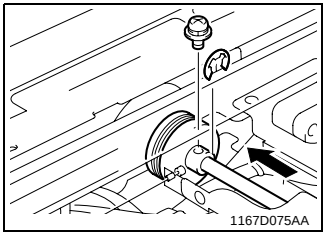


9. Wind the hook end of the cable two turns counter-clockwise from the front to the rear.

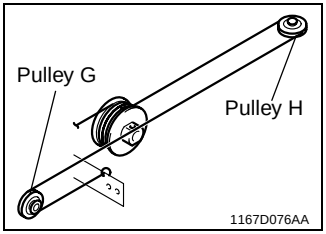


10. Wind the bead end of the cable four turns clockwise from the rear to the front. Then, secure the cable with tape.

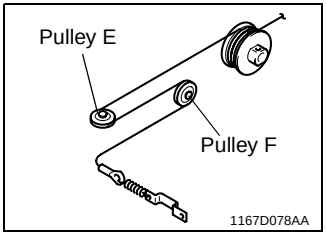
NOTE
Make sure that no part of the cable rides on the other.



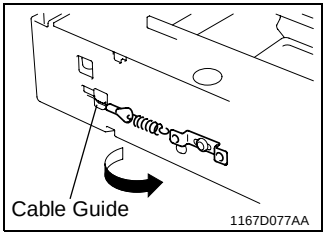
11. Slide the pulley toward the rear and install one mounting screw and one E-ring.



12. Wind the bead end of the cable around pulley H and pulley G and hook the bead onto the Adjustable Anchor.



13. Wind the hook end of the cable around pulley E and pulley F.



14. Fit the hook end of the cable into the groove in the Cable Guide and hook the spring.

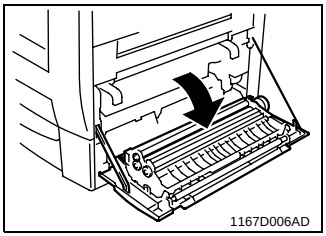
15. Peel off the tape from the pulleys at the front and rear.
16. Mount the Scanner.
17. Mount the Original Size Detection Sensor.
18. Reinstall the Left IR Cover.
19. Reinstall the Original Glass and ADF Glass Assy.
20. Perform the Focus-Positioning of the Scanner and 2nd/3rd Mirrors Carriage. (For details, see ADJUSTMENT.)

NOTE

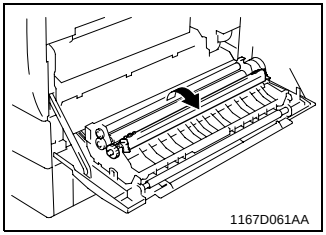
Whenever the Scanner Drive Cables have been removed, be sure to make the following adjustment: CD of Zoom Adjust (IR).

2-5. IMAGE TRANSFER SECTION

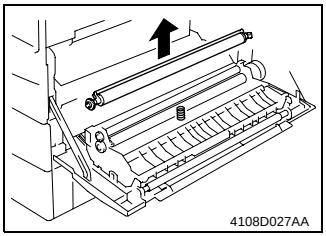
(1) Removal of the Image Transfer Roller



1. Open the Side Cover.



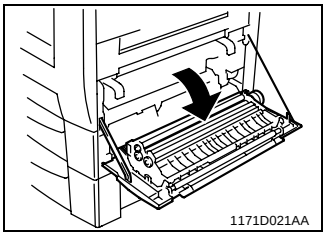
2. Raise the Image Transfer Guide Plate.



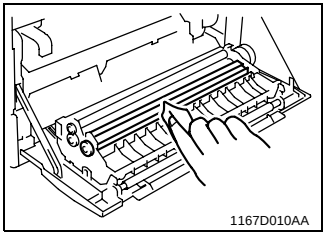
3. Remove the Image Transfer Roller and replace it.

NOTE
Do not touch the surface of the Image Transfer Roller directly with bare hands.

(2) Cleaning of the Pre-Image Transfer Guide Plate



1. Open the Side Cover.

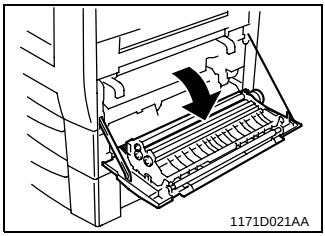


2. Using a soft cloth dampened with alcohol, wipe the Pre-Image Transfer Guide Plate.

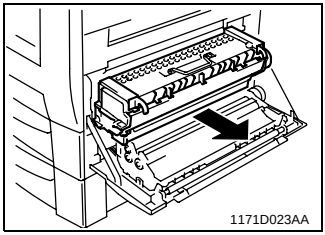
NOTE
Make sure the alcohol does not touch the surface of the Image Transfer Roller.

2-6. DEVELOPING SECTION

(1) Removal of the Imaging Cartridge



1. Open the Side Cover.



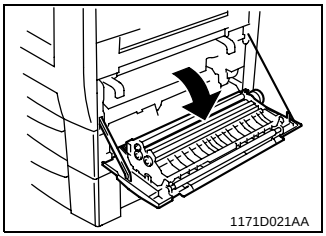
2. Holding onto the green handles, slide the Imaging Cartridge part of the way out.
3. Then grasp the handle on top of the cartridge and pull the cartridge out.

NOTE

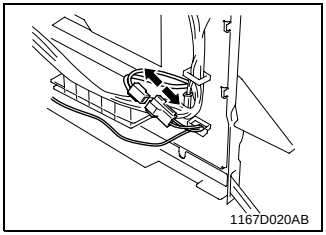
When installing the Imaging Cartridge, push it all the way into the machine.
If the cartridge is not properly installed, the PC Drum protective shutter of the cartridge may not be opened or may even be damaged.

2-7. FUSING SECTION

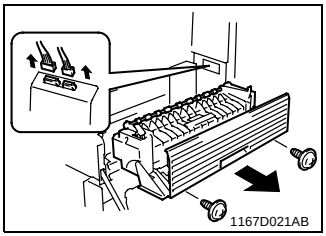
(1) Removal of the Fusing Unit



1. Open the Side Cover.

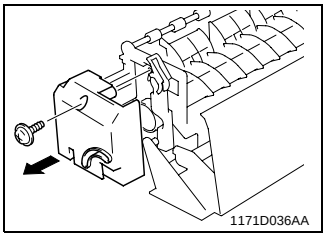


2. Remove the Front Cover.
3. Unplug one connector at the front.

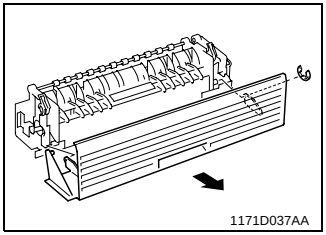


4. Open the Exit Cover and unplug two connectors in the rear.
5. Close the Exit Cover and remove two screws and the Fusing Unit.

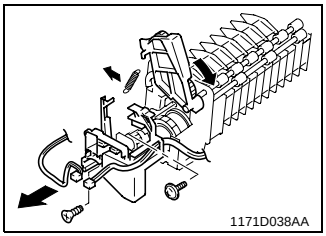
(2) Removal of the Fusing Roller Heater Lamp, Fusing Right Roller, Fusing Left Roller, Fusing Roller Thermistor, Fusing Roller Thermostat, and Fusing Roller Heater Lamp Fuse



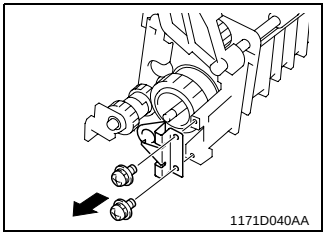
1. Open the Exit Cover.
2. Remove one screw and the Fusing Front Cover.



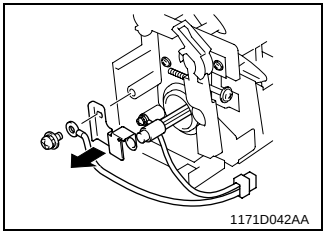
3. Snap off one E-ring and remove the Exit Cover.



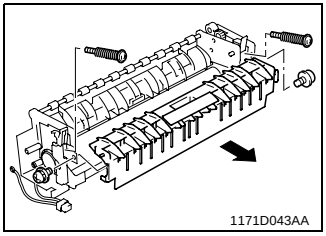
4. Unhook one spring to free the Idle Lever.
5. Remove two harnesses.
6. Remove two screws and the Rear Cover.



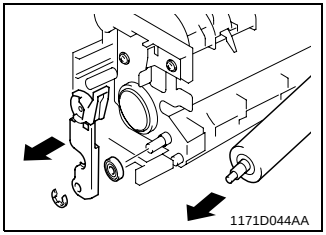
7. Remove two screws and the rear Lamp Holder.



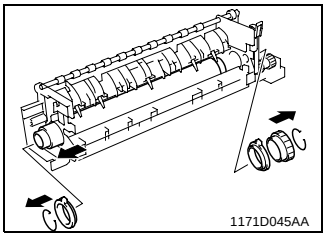
8. Remove one screw and the front Lamp Holder.
9. Remove the Fusing Roller Heater Lamp.



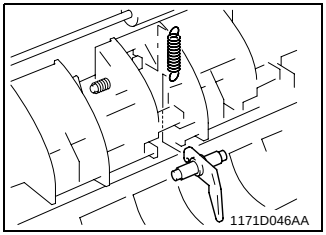
10. Remove two screws and the Fusing Rear Guide Assy.
11. Remove two pressure springs.



12. Snap off one E-ring and remove the front Misfeed Clearing Lever Assy and bearing.
13. Remove the Fusing Right Roller.

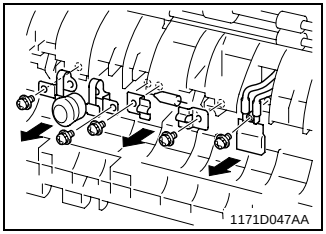


14. Snap off two retaining rings.
15. Remove one gear and two bushings.
16. Remove the Fusing Left Roller.



NOTE

When the Fusing Left Roller is removed, it can cause the spring to come off the Separator Finger. After the Fusing Left Roller has later been reinstalled, be sure to hook the spring onto the Separator Finger.

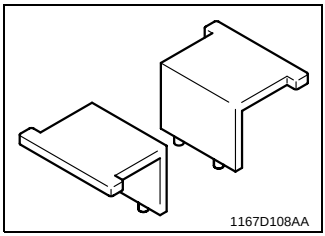


17. Remove one screw and the Fusing Roller Thermistor.
18. Remove two screws and the Fusing Roller Heater Lamp Fuse.
19. Remove two screws and the Fusing Roller Thermostat.

3 ADJUSTMENT

3-1. ADJUSTMENT JIGS AND TOOLS USED

1. Scanner/Mirrors Carriage Positioning Jigs

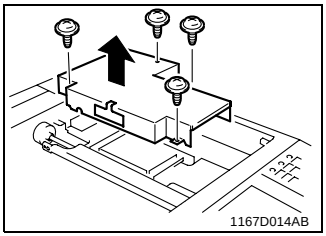


3-2. ADJUSTMENT REQUIREMENT LIST

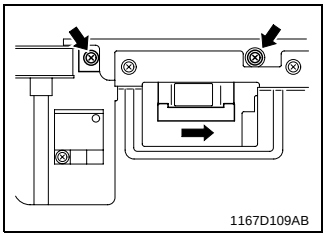
Adjustment Item	Requirements	Adjustment Point	Ref. Page
Touch Panel Adj.	Automatically adjusted	Control Panel	D-32
Original Size Detecting Sensor Adjustment	↑	↑	D-33
Loop Adjustment	—	↑	D-34
Edge Erase			
Leading	—	↑	D-35
Trailing	—	↑	D-36
Right/Left	—	↑	D-37
Registration (CD) (Printer)	10 ± 2.0 mm	↑	D-38
Registration (FD) (Printer)	↑	↑	D-40
Registration (IR)			
CD	↑	↑	D-42
FD	↑	↑	D-44
Zoom Adjust (IR)			
CD	200 ±1.0 mm	↑	D-46
FD	300 ±1.5 mm	↑	D-48
IR-Erasure Width	—	↑	D-50

3-3. ADJUSTMENT OF BELT TENSION

- Adjustment of the Scanner Motor Timing Belt



1. Remove the Original Glass.
2. Remove four screws and the Cover.



3. Loosen the two screws that secure the Scanner Motor. Using a bar tension gage, pull the motor to the right with a tension of 1000 g ±50 g and, at the same time, tighten the mounting screws.

NOTE

After the adjustment, turn the timing belt to check that the belt teeth are in mesh with the pulley grooves.

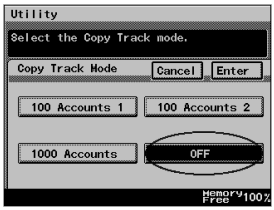
3-4. TEST PRINT

NOTES

This function is used to make the following electrical and image adjustments:

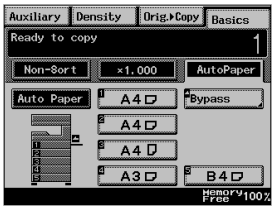
- *Registration (CD) (Printer)*
- *Registration (FD) (Printer)*
- *Registration (IR)*
- *Zoom Adjust (IR)*

◎ Adjustment Procedure



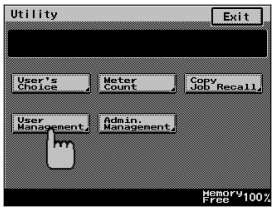
1171D026CA

1. Check that “Copy Track Mode” of “Copy Track” under “Admin. Management” available from “Utility” is “OFF.”



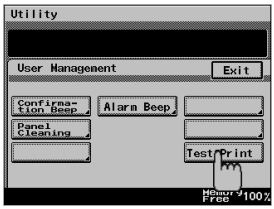
1171D027CA

2. Select the paper source for the test print.



1171D028CA

3. Press the Utility key on the control panel and touch [User Management].



1171D029CA

4. Touch [Test Print] to produce a test pattern.

3-5. ELECTRICAL/IMAGE ADJUSTMENT

(1) Touch Panel Adj.

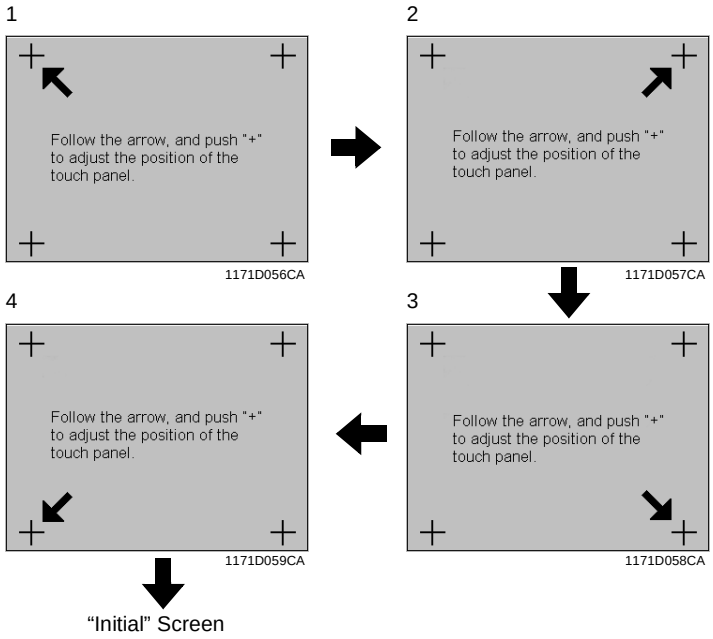
NOTE

Make this adjustment after either of the following procedures have been performed:

- *Memory Clear*
- *Control Panel replacement*

◎ Adjustment Procedure

1. Call the Initial mode to the screen. (For details, see SWITCHES ON PWBs, TECH. REP. SETTINGS.)
2. Touch [Touch Panel Adj.].


1
Follow the arrow, and push "+" to adjust the position of the touch panel.
1171D056CA
2
Follow the arrow, and push "+" to adjust the position of the touch panel.
1171D057CA
3
Follow the arrow, and push "+" to adjust the position of the touch panel.
1171D058CA
4
Follow the arrow, and push "+" to adjust the position of the touch panel.
1171D059CA
"Initial" Screen

3. Touch + on screen 1.

NOTE

At this time, ensure that the very center of "+" is touched using the tip of a ballpoint pen or similar device.

4. Touch + on screen 2.
5. Touch + on screen 3.
6. Touch + on screen 4.

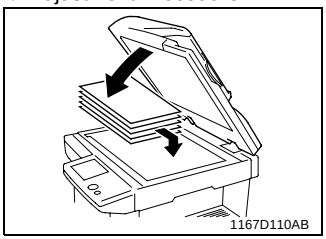
(2) Original Size Detecting Sensor Adjustment (F7-1)

NOTE

Make this adjustment after any of the following procedures have been performed:

- *Memory Clear*
- *A faulty original size detection occurs*
- *Replacement of the CCD Unit and Scanner parts (including the Exposure Lamp)*
- *RAM Board replacement*

◎ Adjustment Procedure



1. Stack five sheets of blank A3 or 11” × 17” paper on the Original Glass and lower the Original Cover.
2. Call the Tech. Rep. mode to the screen.
3. Touch [Function] to call the Function menu.
4. Touch F7-1 Original Size Detecting Sensor Adjustment.
5. Press the Start key to run the Original Size Detecting Sensor Adjustment function.

NOTE

The Start key remains lit up orange while this function is being run and lights up green as soon as the sequence is completed.

(3) Loop Adjustment

Requirement

Adjust so that a correct loop is formed before the Synchronizing Rollers when paper is fed through.

Adjust Mode	Setting Value
Loop Adjustment	-5 to +5

NOTE

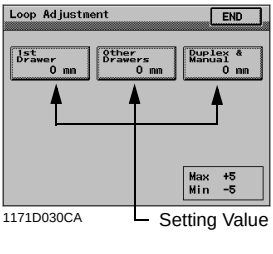
This adjustment is to be made when any of the following symptoms occurs: variations in the amount of print leading edge void, paper skew, and misfeed.

◎ Adjustment Procedure

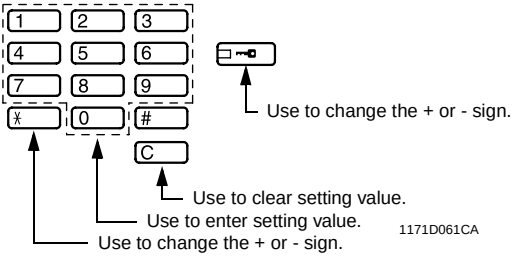
1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice], then [Printer].
3. Touch [Loop Adjustment] to enter the Loop Adjustment mode.
4. Select the paper source for which the adjustment is to be made.
5. Press the Clear key to clear the current setting.
6. Enter the new setting value from the 10-Key Pad.

Setting Instructions

Change the setting value as necessary until there are no variations in the amount of void image along the leading edge, skewed feeding, dog-ear, or misfeed.



1171D030CA



1171D061CA

7. Touch the [END] key to validate the setting value.

Caution

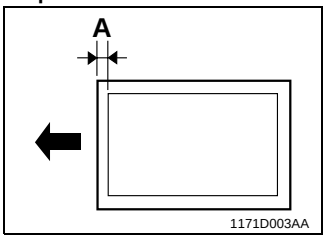
Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

8. Perform the same steps to adjust for the other paper sources.

(4) Edge Erase

1. Leading

Requirement



Adjust so that the erase width on the leading edge falls within the range of 0 to 5 mm.

Adjust Mode	Setting Range
Edge Erase/Leading	0 to 5

NOTE

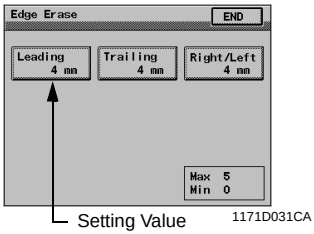
This adjustment must be made when the PH Unit has been replaced and after Registration (CD/FD) (Printer) has been made.

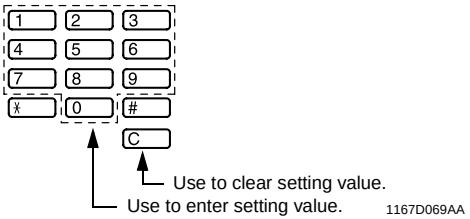
◎ Adjustment Procedure

1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice], then [Printer].
3. Touch [Edge Erase] and then [Leading] to enter the Leading Edge Erase adjustment mode.
4. Press the Clear key to clear the current setting.
5. Enter the new setting value from the 10-Key Pad.

Setting Instructions

To make the edge erase width smaller, decrease the setting value.
To make the edge erase width greater, increase the setting value.





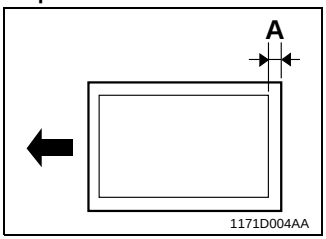
6. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

2. Trailing

Requirement



Adjust so that the erase width on the trailing edge falls within the range of 0 to 5 mm.

Adjust Mode	Setting Range
Edge Erase/Trailing	0 to 5

NOTE

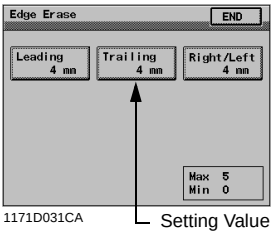
This adjustment must be made when the PH Unit has been replaced and after Registration (CD/FD) (Printer) has been made.

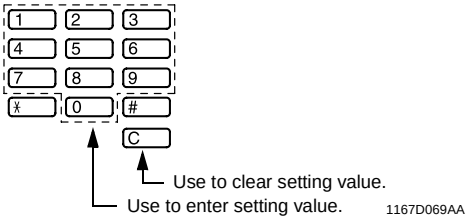
◎ Adjustment Procedure

1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice], then [Printer].
3. Touch [Edge Erase] and then [Trailing] to enter the Trailing Edge Erase adjustment mode.
4. Press the Clear key to clear the current setting.
5. Enter the new setting value from the 10-Key Pad.

Setting Instructions

To make the edge erase width smaller, decrease the setting value.
To make the edge erase width greater, increase the setting value.





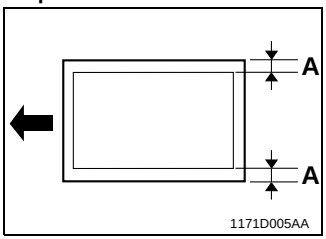
6. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

3. Right/Left

Requirement



Adjust so that the erase width on the right/left edge falls within the range of 0 to 5 mm.

Adjust Mode	Setting Range
Edge Erase/Right/Left	0 to 5

NOTE

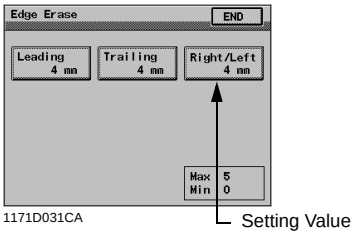
This adjustment must be made when the PH Unit has been replaced and after Registration (CD) (Printer) have been made.

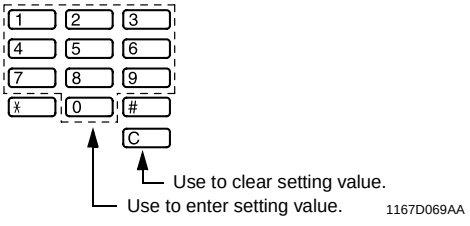
◎ Adjustment Procedure

1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice], then [Printer].
3. Touch [Edge Erase] and then [Right/Left] to enter the Right/Left Edge Erase adjustment mode.
4. Press the Clear key to clear the current setting.
5. Enter the new setting value from the 10-Key Pad.

Setting Instructions

To make the edge erase width smaller, decrease the setting value.
To make the edge erase width greater, increase the setting value.





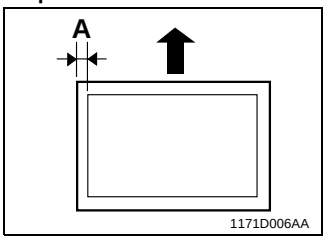
6. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

(5) Registration (CD) (Printer)

Requirement



Adjust so that width A on the test pattern output falls within the following range.

Specification	Adjust Mode	Setting Range
1-Sided: 10 ±2.0 mm 2-Sided: 10 ±3.0 mm	Registration (CD)	-4.0 to +4.0

NOTE

This adjustment must be made when the PH Unit has been replaced and, for 2-sided, after Registration (CD) (Printer) for each paper source for 1-sided and Registration (FD) (Printer) have been made.

◎ Adjustment Procedure

1. Produce a test pattern. (For details, see 3-4. TEST PRINT.)
2. 1-Sided: Check to see if width A on the test pattern meets the specifications.
   2-Sided: Using the test pattern output as the original, make an ordinary 2-sided copy. Check to see if width A on the second side of the 2-sided copy meets the specifications.

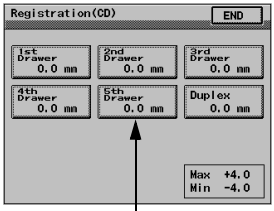
   If width A falls outside the specified range, perform these steps to make the adjustment.

3. Call the Adjust mode to the screen.
4. Touch [Printer] and [Registration (CD)], in that order.
5. Select the paper source for which the adjustment is to be made.
6. Press the Clear key to clear the current setting.
7. Enter the new setting value from the 10-Key Pad.

Setting Instructions

If width A is wider than specifications, make the setting value smaller than the current one. If width A is narrower than specifications, make the setting value greater than the current one.

✻ If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.



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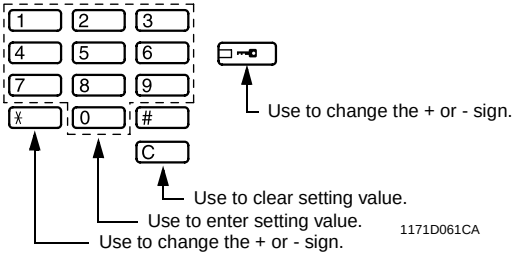

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8. Touch the [END] key to validate the setting value.

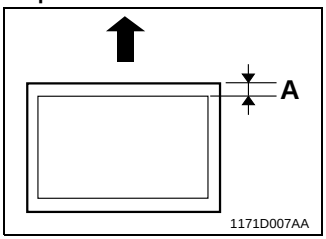
Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

9. Perform the same steps to adjust for the other paper sources.

(6) Registration (FD) (Printer)

Requirement



Adjust so that width A on the test pattern output falls within the following range.

Specification	Adjust Mode	Setting Range
10 ±2.0 mm	Registration (FD)	-26 to +26

NOTE

This adjustment must be made when the PH Unit has been replaced and after Registration (CD) (Printer) has been made.

◎ Adjustment Procedure

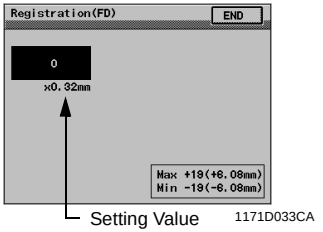
1. Produce a test pattern. (For details, see 3-4. TEST PRINT.)
2. Check to see if width A on the test pattern meets the specifications.
   If width A falls outside the specified range, perform these steps to make the adjustment.

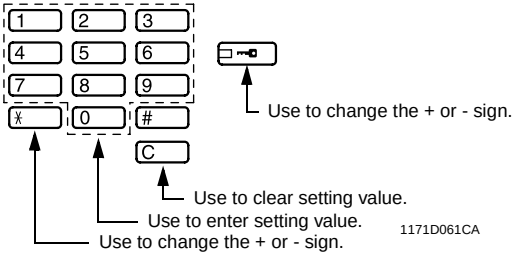
3. Call the Adjust mode to the screen.
4. Touch [Printer] and [Registration (FD)], in that order.
5. Select the paper source for which the adjustment is to be made.
6. Press the Clear key to clear the current setting.
7. Enter the new setting value from the 10-Key Pad.

Setting Instructions

If width A is wider than specifications, make the setting value smaller than the current one.
If width A is narrower than specifications, make the setting value greater than the current one.

✻ If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.





8. Touch the [END] key to validate the setting value.

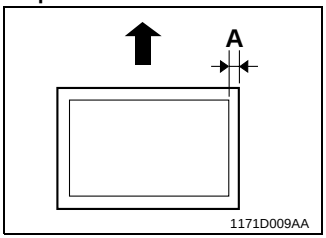
Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

(7) Registration (IR)

1. CD

Requirement



Place the test pattern output after the adjustments of Registration (CD and FD) (Printer) have been completed on the Original Glass and make a copy of it. Adjust so that width A on the test pattern copy falls within the following range.

Specification	Adjust Mode	Setting Range
10 ±2.0 mm	Registration (CD)	-127 to +127

NOTE

This adjustment must be made when the PH Unit has been replaced and after the adjustments of Registration (CD and FD) (Printer) and CD of Zoom Adjust (IR) have been made.

◎ Adjustment Procedure

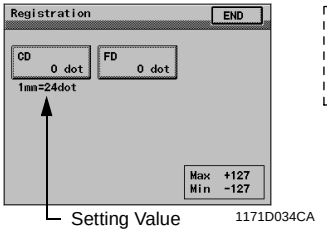
1. After the adjustments of Registration (CD and FD) (Printer) and CD of Zoom Adjust (IR) have been completed, produce a test pattern. (For details, see 3-4. TEST PRINT.)
2. Place the test pattern output on the Original Glass and make a copy of it.
3. Check to see if width A on the test pattern copy meets the specifications.
   If width A falls outside the specified range, perform these steps to make the adjustment.

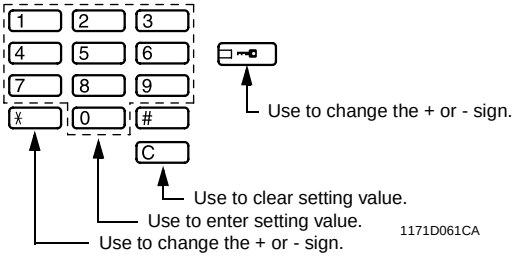
4. Call the Adjust mode to the screen.
5. Touch [IR], [Registration], and [CD], in that order.
6. Press the Clear key to clear the current setting.
7. Enter the new setting value from the 10-Key Pad.

Setting Instructions

If width A is wider than specifications, make the setting value smaller than the current one. If width A is narrower than specifications, make the setting value greater than the current one.

✻ If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.



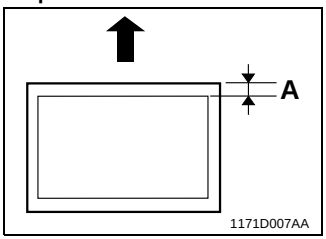


8. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

Requirement



Place the test pattern output after the adjustments of Registration (CD and FD) (Printer) have been completed on the Original Glass and make a copy of it. Adjust so that width A on the test pattern copy falls within the following range.

Specification	Adjust Mode	Setting Range
10 ±2.0 mm	Registration (FD)	-127 to +127

NOTE

This adjustment must be made when the PH Unit has been replaced and after the adjustments of Registration (CD and FD) (Printer) and FD of Zoom Adjust (IR) have been made.

◎ Adjustment Procedure

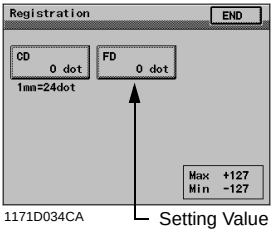
1. After the adjustments of Registration (CD and FD) (Printer) and FD of Zoom Adjust (IR) have been completed, produce a test pattern. (For details, see 3-4. TEST PRINT.)
2. Place the test pattern output on the Original Glass and make a copy of it.
3. Check to see if width A on the test pattern copy meets the specifications.
   If width A falls outside the specified range, perform these steps to make the adjustment.

4. Call the Adjust mode to the screen.
5. Touch [IR], [Registration], and [FD], in that order.
6. Press the Clear key to clear the current setting.
7. Enter the new setting value from the 10-Key Pad.

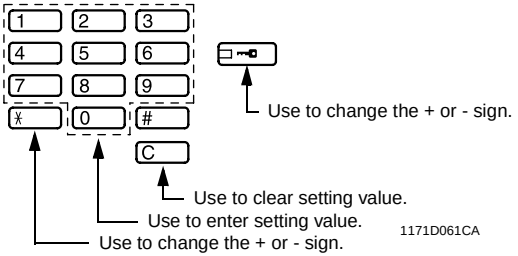
Setting Instructions

If width A is wider than specifications, make the setting value smaller than the current one. If width A is narrower than specifications, make the setting value greater than the current one.

✻ If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.



1171D034CA



1171D061CA

8. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

(8) Zoom Adjust (IR)

1. CD

Requirement

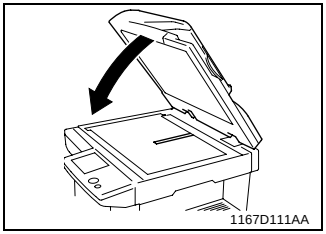
1. The difference should be within ±1.0% of the actual length.
2. Adjust so that the following specifications are satisfied with a scale length of 300 mm.

Zoom Ratio	Specification	Adjust Mode	Setting Range
Full size (×1.000)	300 ±3.0 mm	Zoom Adjust (CD)	0.990 to 1.010

NOTE

This adjustment must be made when the Scanner Drive Cables have been replaced and after the adjustments of Registration (CD and FD) (Printer) have been made.

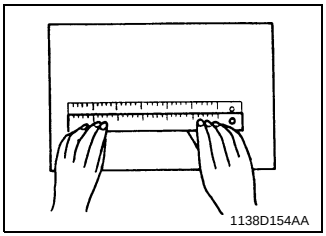
◎ Adjustment Procedure



1. Place a scale in parallel with the Original Width Scale and make a copy. (Note that the scale is perpendicular to the Original Length Scale.)

✻ Use the full size (×1.000) mode and A3 or 11" × 17" paper.

✻ If the scale is of plastic and transparent, place a blank sheet of paper over it.



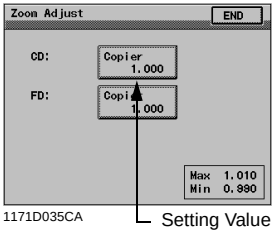
2. Measure the length of the scale on the copy to find the difference.

✻ If the difference is outside the specification, adjust by following the procedure shown below.

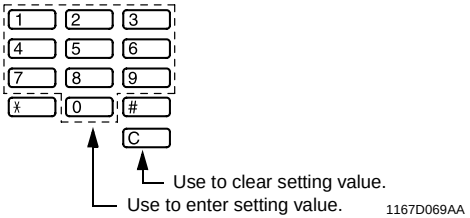
3. Call the Adjust mode to the screen.
4. Touch [IR], [Zoom Adjust], and [CD], in that order.
5. Press the Clear key to clear the current setting.
6. Enter the new setting value from the 10-Key Pad.

Setting Instructions

If the scale on the copy is longer than the actual scale, decrease the setting value.
If the scale on the copy is shorter than the actual scale, increase the setting value.
✻ If the measurement does not fall within the specifications through one setting, try another setting.



1171D035CA



1167D069AA

7. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

2. FD

Requirement

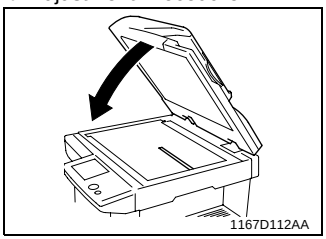
1. The difference should be within ±1.0% of the actual length.
2. Adjust so that the following specifications are satisfied with a scale length of 200 mm.

Zoom Ratio	Specification	Adjust Mode	Setting Range
Full size (×1.000)	200 ±2.0 mm	Zoom Adjust (FD)	0.990 to 1.010

NOTE

This adjustment must be made when the CCD Unit has been replaced and after the adjustments of Registration (CD and FD) (Printer) have been made.

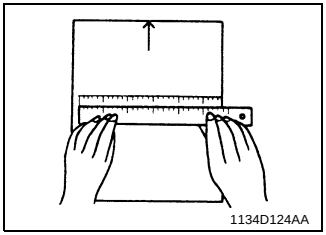
◎ Adjustment Procedure



1. Place a scale in parallel with the Original Length Scale and make a copy.

✻ Use the full size (X1.000) mode and paper with a width of 200 mm or more.

✻ If the scale is of plastic and transparent, place a blank sheet of paper over it.



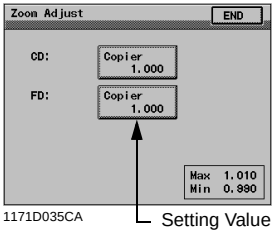
2. Measure the length of the scale on the copy to find the difference.

✻ If the difference is outside the specification, adjust by following the procedure shown below.

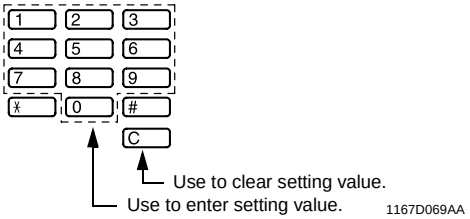
3. Call the Adjust mode to the screen.
4. Touch [IR], [Zoom Adjust], and [FD], in that order.
5. Press the Clear key to clear the current setting.
6. Enter the new setting value from the 10-Key Pad.

Setting Instructions

If the scale on the copy is longer than the actual scale, decrease the setting value.
If the scale on the copy is shorter than the actual scale, increase the setting value.
✻ If the measurement does not fall within the specifications through one setting, try another setting.



1171D035CA



1167D069AA

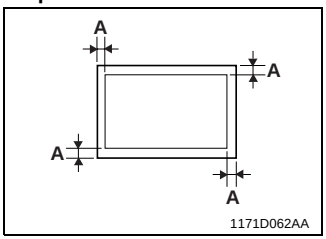
7. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operating mode. If the Panel Reset Key is used, the previous setting remains valid.

(9) IR-Erasure Width

Requirement



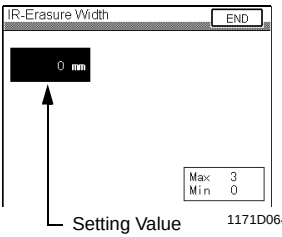
Set so that the erase width along four edges of the paper falls within the range of 0 to 3 mm.

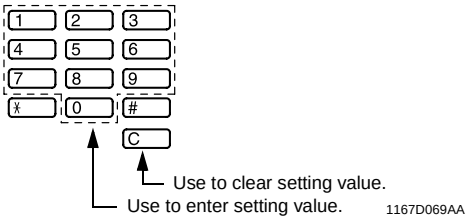
Adjust Mode	Setting Range
IR-Erasure Width	0 to 3

NOTE
This adjustment must be made when a shadow is produced from the Original Scale.

◎ Adjustment Procedure
1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice].
3. Touch [IR-Erasure Width] to enter the IR-Erasure Width mode.
4. Press the Clear key to clear the current setting.
5. Enter the new setting value from the 10-Key Pad.

Setting Instructions
To make the erase width along four edges of the paper smaller, decrease the setting value.
To make the erase width along four edges of the paper greater, increase the setting value.





6. Touch the [END] key to validate the setting value.

Caution
Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

3-6. OTHER ADJUSTMENTS

- Focus-Positioning of the Scanner and 2nd/3rd Mirrors Carriage

NOTE

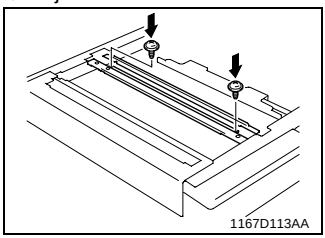
Make this adjustment after any of the following procedures has been performed:

- *After the Scanner Drive Cable has been replaced.*
- *When the Scanner Fixing Bracket has been removed from the Scanner Drive Cable.*
- *When the Scanner Drive Cable comes unwound.*

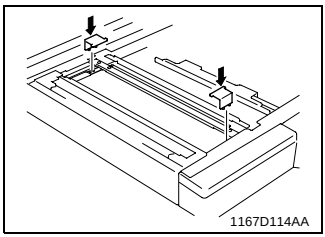
Requirement

With the Scanner fixed to the Scanner Drive Cables, there should be no gap between the Scanner/Mirrors Carriage Positioning Jig and the Scanner and also between the Scanner/ Mirrors Carriage Positioning Jig and the 2nd/3rd Mirrors Carriage.

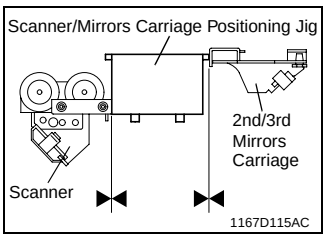
◎ Adjustment Procedure



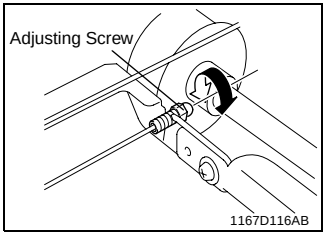
1. Remove the Exposure Lamp. (For details, see steps 1 through 7, (8) Removal of the Scanner, 2-4 OPTICAL SECTION.)
2. Temporarily loosen the set screws of the cable holding plate of the Scanner Drive Cable.



3. Fit the Scanner/Mirrors Carriage Positioning Jigs in the space between the Scanner and 2nd/3rd Mirrors Carriage.

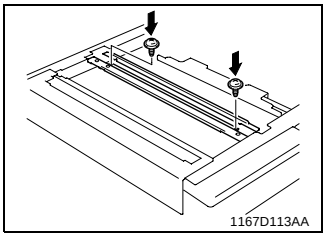


4. Press the Scanner up against the jig and 2nd/3rd Mirrors Carriage and, at the same time, tighten the set screws of the cable holding plate.

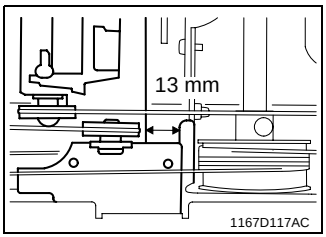


NOTE
If the Scanner does not run parallel with the 2nd/3rd Mirrors Carriage when the Scanner/Mirrors Carriage Positioning Jigs are in position, turn the adjusting screw for the rear Scanner Drive Cable as necessary.

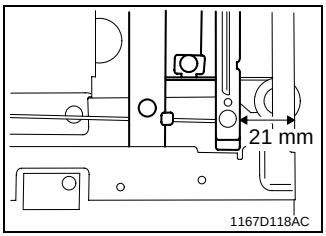
✻ If the Scanner/Mirrors Carriage Positioning Jigs are not available, follow these steps to make the adjustment.



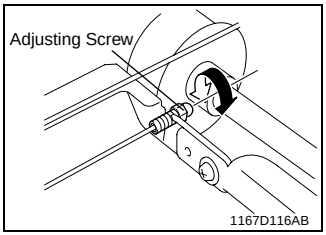
1. Temporarily loosen the set screws of the cable holding plate of the Scanner Drive Cable.



2. Obtain a distance of 13 mm between the 2nd/3rd Mirrors Carriage and rail.



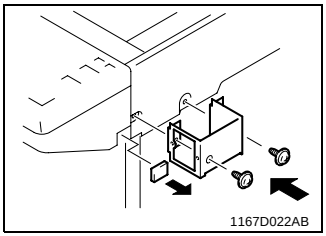
3. Secure the Scanner where it is located at a position 21 mm from the right side face.
4. Tighten the set screws of the cable holding plate.



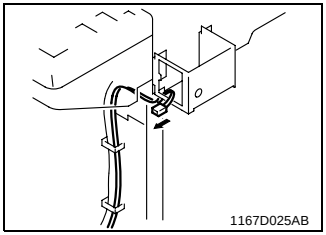
NOTE
If the Scanner does not run parallel with the 2nd/3rd Mirrors Carriage, turn the adjusting screw for the rear Scanner Drive Cable as necessary.

4 MISCELLANEOUS

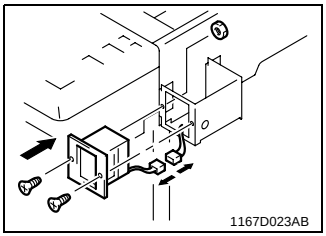
4-1. INSTALLATION OF THE KEY COUNTER SOCKET (OPTION)



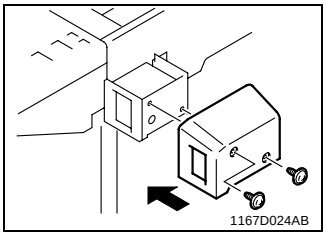
1. Remove the Front Cover.
2. Remove the knockout from the Front Upper Cover.
3. Using two screws, secure the Counter Mounting Bracket.



4. Route the harness of the Key Counter as shown.



5. Connect the Key Counter Socket connector.
6. Using one screw and one screw and nut, secure the counter socket.



7. Using two screws, secure the Key Counter Cover.

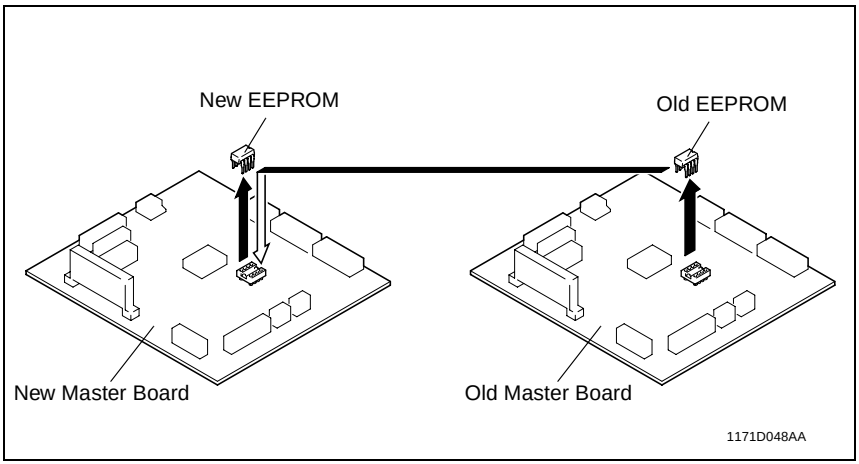
NOTE
When the Key Counter Socket is mounted, set to "ON" the "Key Counter" available from the Security mode.

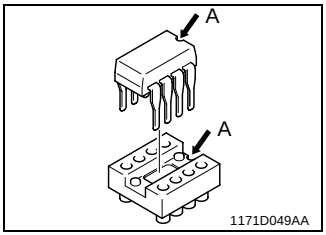
4-2. REMOUNTING THE EEPROM (IC3A)

NOTES

- *If the Imaging Cartridge is not to be replaced after the Master Board has been replaced with a new one, be sure to remount the EEPROM (IC3A) from the old to new Master Board.*
- *If the Master Board has been replaced with a new one and the EEPROM (IC3A) has not been remounted, be sure to replace the Imaging Cartridge with a new one. Because the EEPROM contains no data in this case, make settings and readjustments as necessary.*

1. Remove the Master Board. (For details, see 2-2. REMOVAL OF CIRCUIT BOARDS AND OTHER ELECTRICAL COMPONENTS.)
2. Demount the EEPROM (IC3A) from the new Master Board.
3. Demount the EEPROM (IC3A) from the old Master Board and remount it onto the new Master Board.





NOTE

Note the alignment notch on the EEPROM (IC3A) when mounting the IC.

Di250

TROUBLESHOOTING

MINOLTA

14413

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      C004C: M8 Malfunction
      C004E: M4 Malfunction
      C0070: M6 Malfunction T-30
      (2) C0500: Warming-up Failure
      C0510: Abnormally Low Fusing Temperature
      C0520: Abnormally High Fusing Temperature T-33
      (3) C0650: Faulty PC12
      C0651: Faulty PC13 ..... T-35
      (4) C0990: EMOT Malfunction
      C0991: Lift 1 Ascent Motion Failure
      C0995: HMOT Malfunction
      C0999: Lift 2 Ascent Motion Failure
      C099D: Communications Error T-37
      (5) C0F32: Faulty E1
      C0F33: ATDC Adjustment Failure T-40
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1 INTRODUCTION

1-1. General Precautions

1. When servicing the copier with its covers removed, use utmost care to prevent your hands, clothing, and tools from being caught in revolving parts including the chains and gears. When servicing the copier with the Rear Cover removed, be sure to fit the interlock switch actuating jig in position.
2. Before attempting to replace parts and unplug connectors, make sure that the power cord of the copier has been unplugged from the wall outlet.
3. Never create a closed circuit across connector pins except those specified in the text and on the printed circuit.
4. When creating a closed circuit and measuring a voltage across connector pins specified in the text, be sure to use the green wire (GND).
5. When the user is using a word processor or personal computer from a wall outlet of the same line, take necessary steps to prevent the circuit breaker from opening due to overloads.
6. Keep all disassembled parts in good order and keep tools under control so that none will be lost or damaged.

1-2. How to Use This Book

1. If a component on a PWB or any other functional unit including a motor is defective, the text only instructs you to replace the whole PWB or functional unit and does not give troubleshooting procedures applicable within the defective unit.
2. All troubleshooting procedures contained herein assume that there are no breaks in the harnesses and cords and all connectors are plugged into the right positions.
3. For the removal procedures of covers and parts, see DIS/REASSEMBLY, ADJUSTMENT.
4. The troubleshooting procedures are given in the order of greater frequency of trouble or order of operation.
5. The procedures preclude possible malfunctions due to noise and other external causes.

1-3. Reading the Text

1. The paper transport failure troubleshooting procedures are given according to the symptom. First identify the location where the paper is present and start the procedure for that particular location. For malfunction troubleshooting, start with step 1 and onward.
2. Make checks in numerical order of steps and, if an item is checked okay, go to the next step.

Pattern 1

Step	Check Item	Result	Action
1	Is--?	YES	Do this.
2		↑	

Go to step 2 if you answered No.

Pattern 2

Step	Check Item	Result	Action
1	Is--?	YES	Do this.
		NO	Check that.
2			↑

Go to step 2 if it checks okay.

2 I/O CHECK

2-1. Controlled Parts Check Procedure

To allow the Tech. Rep. to easily and safely determine whether a particular controlled part is fully operational, this copier provides the following provision: checking the data of the input port of the board IC with the copier in the standby state (including a misfeed, malfunction, and closure failure condition) allows the Tech. Rep. to determine whether signals are properly input to a controlled part.

<Procedure>

1. When a misfeed or malfunction occurs, locate on a circuit diagram accompanying the text the controlled part which is probably defective.
2. Select “I/O Check” from the Tech. Rep. Mode menu screen and then access the screen which contains the controlled part picked out in step 1 above. (See SWITCHES ON PWBs/TECH. REP. MODE.)
3. Check the input port data to determine if a signal is probably input to the controlled part.

<Controlled Part Check Procedure Through Checking Input Port Data>

Example

When a paper misfeed occurs in the paper take-up section of the copier, Synchronizing Roller Sensor PC2 is considered to be responsible for it.

<Procedure>

1. Remove the sheet of paper misfed.
2. From the I/O Check list, it is found that the signal input to PC2 is “Timing Roller.”
3. Select “I/O Check” from Tech. Rep. Mode and then “Printer.” Now, access the screen that contains “Timing Roller.”
4. Check that the input port data of “Timing Roller” is “0” (sensor is blocked).
5. Move the PC2 actuator to unblock the sensor.
6. Check at this time that the input port data on the screen changes from “0” to “1.”

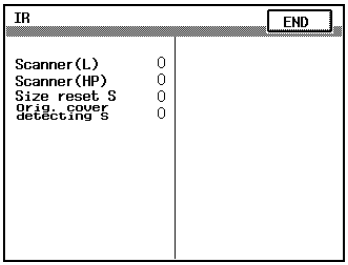
1: PC2 is operational. 0: PC2 is faulty.

2-2. I/O Check List

<I/O Check Screens>

- The following screens are only typical and the input data shown does not necessarily represent the actual one.

IR



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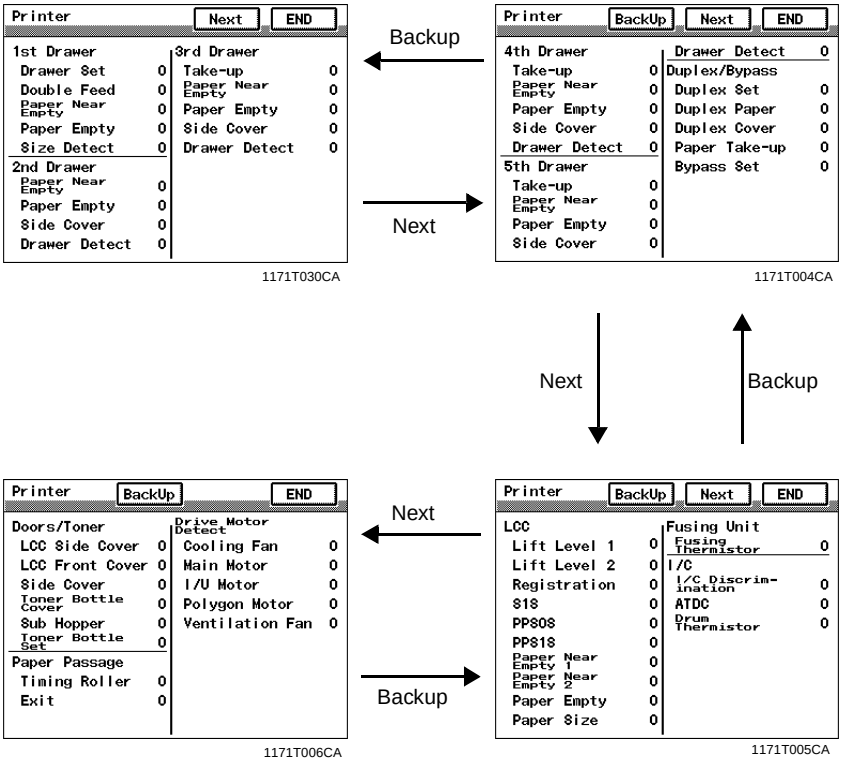
Printer



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<I/O Check List>

IR

Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.
			1	0				
PC13	Scanner (L)	Scanner Home Position Sensor 2	Blocked	Unblocked	HGB Board	—	——	CN7HGB-27
PC12	Scanner (HP)	Scanner Home Position Sensor 1	At home	Not at home		—	——	CN7HGB-26
S5	Size reset S	Size Reset Switch	When closed	When opened		—	——	CN7HGB-24
PC14	Orig. cover detecting S	Original Cover Detecting Sensor	Within 15°	15° or more		—	——	CN7HGB-25

Printer

Symbol	Panel Display		Parts/Signal Name		Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.
					1	0				
PC6	1st Drawer	Drawer Set	Cassette Set Sensor		In position	Out of position	Master Board PWB-A	IC1	PO1	PJ13A-5B
PWB-H		Double Feed	Double Feed Detecting Board		Blocked ✻1	Unblocked ✻1		IC1	PO2	PJ14A-8B
PC5		Paper Near Empty	Paper Near Empty Sensor		Unblocked	Blocked		IC1	PO3	PJ13A-2B
PC4		Paper Empty	Paper Empty Sensor		Paper not present	Paper present		IC1	PO5	PJ14A-13A
PWB-I		Size Detect	Paper Size Detecting Board		Analog value			IC1	P103/ AN3	PJ14A-1B to PJ14A-4B
S5	2nd Drawer	Paper Near Empty	Paper Near Empty Sensor		Unblocked	Blocked	Cassette Main Board PWB-A	IC1	P12	PJ3A-11B
S4		Paper Empty	Paper Empty Sensor		Paper not present	Paper present		IC1	P6	PJ3A-5B
S2		Side Cover	Side Cover Set Sensor		When opened	When closed		IC1	P9	PJ3A-8B
S1		Drawer Detect	Cassette Set Switch		In position: 2 displayed Out of position: 0 displayed			IC1	P11	PJ3A-12A
S3	3rd Drawer	Take-up	Take-Up Sensor		Paper present	Paper not present	Cassette Main Board PWB-A: PF-108/ PF-110	IC1	P5	PJ3A-2B
S5		Paper Near Empty	Paper Near Empty Sensor		Unblocked	Blocked		IC1	P12	PJ3A-11B
S4		Paper Empty	Paper Empty Sensor		Paper not present	Paper present		IC1	P6	PJ3A-5B
S2		Side Cover	Side Cover Set Sensor		When opened	When closed		IC1	P9	PJ3A-8B
S1		Drawer Detect	Cassette Set Switch	When PF-110 is used	In position	Out of position		IC1	P10	PJ3A-9A
				When PF-108 is used	In position: 2 displayed Out of position: 0 displayed			IC1	P11	PJ3A-12A

✻ 1: The display of 1 or 0 is selected only while Main Motor M2 is being energized.

Symbol	Panel Display		Parts/Signal Name		Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.
					1	0				
S3	4th Drawer	Take-up	Take-Up Sensor		Paper present	Paper not present	Cassette Main Board PWB-A: PF-108/ PF-110	IC1	P5	PJ3A-2B
S5		Paper Near Empty	Paper Near Empty Sensor		Unblocked	Blocked		IC1	P12	PJ3A-11B
S4		Paper Empty	Paper Empty Sensor		Paper not present	Paper present		IC1	P6	PJ3A-5B
S2		Side Cover	Side Cover Set Sensor		When opened	When closed		IC1	P9	PJ3A-8B
S1		Drawer Detect	Cassette Set Switch	When PF-110 is used	In position	Out of position		IC1	P10	PJ3A-9A
				When PF-108 is used	In position: 2 displayed Out of position: 0 displayed			IC1	P11	PJ3A-12A
S3	5th Drawer	Take-up	Take-Up Sensor		Paper present	Paper not present		IC1	P5	PJ3A-2B
S5		Paper Near Empty	Paper Near Empty Sensor		Unblocked	Blocked		IC1	P12	PJ3A-11B
S4		Paper Empty	Paper Empty Sensor		Paper not present	Paper present		IC1	P6	PJ3A-5B
S2		Side Cover	Side Cover Set Sensor		When opened	When closed		IC1	P9	PJ3A-8B
S1		Drawer Detect	Cassette Set Switch	When PF-110 is used	In position	Out of position		IC1	P10	PJ3A-9A
				When PF-108 is used	In position: 2 displayed Out of position: 0 displayed			IC1	P11	PJ3A-12A
——	Duplex/ Bypass	Duplex Set	Duplex Unit Set signal		In position	Out of position	Master Board PWB-A	IC1	P91	PJ4A-3B
PI1		Duplex Paper	Duplex Unit Transport Sensor		Paper present	Paper not present		IC1	P92	PJ4A-2B
S2		Duplex Cover	Duplex Unit Door Set Sensor		When opened	When closed		IC1	P90	PJ4A-1B
PC8		Paper Take-up	Manual Feed Paper Take-Up Sensor		Paper present	Paper not present		IC1	P00	PJ4A-7B
——		Bypass Set	Manual Bypass Tray Set signal		In position	Out of position		IC1	P30	PJ4A-9B

Symbol	Panel Display		Parts/Signal Name	Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.
				1	0				
LS1	LCC	Lift Level 1	Lift-Up Sensor 1	At upper limit	Not at upper limit	LCC Main Board PWB-A: PF-106	IC4	P74/ ANI4	CN4A-6
LS2		Lift Level 2	Lift-Up Sensor 2	At upper limit	Not at upper limit		IC4	P73/ ANI3	CN4A-9
RSEN		Registration	Registration Sensor	Paper present	Paper not present		IC4	P22/ INTP1	CN4A-2
S1		S1S	Paper Standby Position Sensor	Paper present ✻2	Paper not present ✻2		IC4	P23/ INTP2/ CI	CN3A-5
PPS0		PPS0S	LCC Take-Up Sensor	Paper present	Paper not present		IC4	P24/ INTP3	CN4A-11
PPS1		PPS1S	Paper Empty Sensor 1	Paper present	Paper not present		IC4	P25/ INTP4/ ASCK	CN3A-2
RS1		Paper Near Empty 1	Paper Near Empty Sensor 1	Blocked	Unblocked		IC4	P75/ ANI5	CN6A-1
RS2		Paper Near Empty 2	Paper Near Empty Sensor 2	Blocked	Unblocked		IC4	P76/ ANI6	CN5A-5
PPS2		Paper Empty	Paper Empty Sensor 2	Paper present	Paper not present		IC4	P72/ ANI2	CN3A-8
SW1		Paper Size	DIP switch	Letter C: 0 displayed A4C: 1 displayed B5C: 2 displayed			IC4	P13, P14, P15	———
TH1	Fusing Unit	Fusing Thermistor	Fusing Roller Thermistor	Analog value		Master Board PWB-A	IC1	P107/ AN7	PJ16A-5
——	I/C	I/C Discrimination	I/C Type Detection signal	Analog value			IC1	P100/ AN0	PJ15A-3
E1		ATDC	ATDC Sensor	Analog value			IC1	P106/ AN6	PJ15A-5
TH2		Drum Thermistor	I/C Thermistor	Analog value			IC1	P104/ AN4	PJ13A-10A

✻ 2: The display of 1 or 0 is selected only while LCC Transport Motor HMOT is being energized.

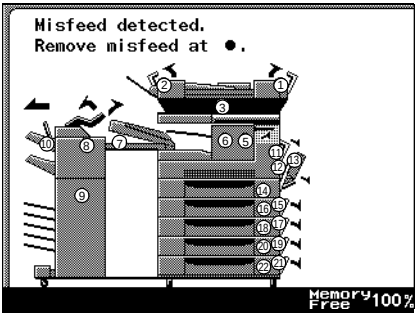
Symbol	Panel Display		Parts/Signal Name	Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.
				1	0				
SIDE	Doors/ Toner	LCC Side Cover	Side Cover Set Sensor	When opened	When closed	LCC Main Board PWB-A	IC4	P34/ T00	CN3A-12
FRONT		LCC Front Cover	LCC Set Sensor	Out of position	In position		IC4	P35/ T01	CN6A-4
S2		Side Cover	Side Cover Interlock Switch	When opened	When closed	Master Board PWB-A	IC1	P31	PJ7A-1
PC11		Toner Bottle Cover	Toner Bottle Cover Sensor	When opened	When closed		IC1	P33	PJ11A-5B
S4		Sub Hopper	Sub Hopper Toner Empty Switch	Toner not loaded: 1 and 0 alternately displayed. Toner loaded: 0 displayed			IC1	P06	PJ11A-7B
PC10		Toner Bottle Set	Toner Bottle Home Position Sensor	At home	Not at home		IC1	P40	PJ11A-2B
PC2	Paper Passage	Timing Roller	Synchronizing Roller Sensor	Paper present	Paper not present		IC1	P41	PJ13A-7A
PC3		Exit	Paper Exit Sensor	Paper present	Paper not present		IC1	P77	PJ13A-12A
M3	Drive Motor Detect	Cooling Fan	Fusing Cooling Fan Motor/LOCK	When energized: 1 and 0 alternately displayed. When deenergized: 0 displayed			IC1	P04	PJ13A-5A
M2		Main Motor	Main Motor/LOCK	When energized	When deenergized		IC1	P43	PJ16A-2
M1		I/U Motor	I/C Motor/LOCK	When energized	When deenergized		IC1	P42	PJ16A-4
M10		Polygon Motor	Polygon Motor/ LOCK	When energized	When deenergized		IC1	P95	PJ8A-4
M8		Ventilation Fan	Ozone Fan Motor	When energized: 1 and 0 alternately displayed. When deenergized: 0 displayed			IC1	P51	PJ11A-3A

3 PAPER TRANSPORT FAILURE

3-1. Paper Misfeed

When a paper misfeed occurs, the Touch Panel shows the corresponding message, misfeed location, and paper location.

⊗ display	Misfeed location
○ display	Paper location



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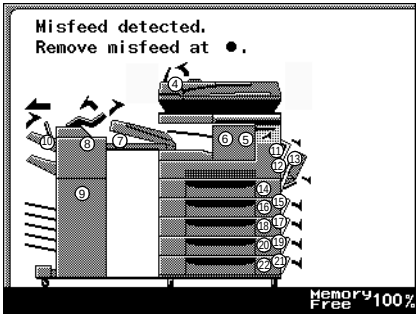

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⊗ or ○ Display	Misfeed/Paper Location	Ref. Page
1	AFR-14 take-up, AFR-14 single feed	See the relevant option service manual.
2	AFR-14 reverse, AFR-14 exit	
3	AFR-14 transport	
4	AF-6 take-up, AF-6 transport	
5	JS-200 transport, OT-100 transport	
6	JS-200 exit, OT-100 exit	
7	Horizontal transport	
8	Finisher transport, 1st Tray exit, Elevator Tray exit	
9	Mailbin transport	
10	Finisher Tray	
11	Separator, Fusing Unit	(3)
12	Manual Bypass take-up	(2)
13	Duplex turnover, Duplex take-up (AD-10)	(6)
14	1st Drawer take-up	(1)
15	2nd Drawer transport	(1)
16	2nd Drawer take-up	(1)
17	3rd Drawer transport (PF-108/PF-110/PF-106)	(4) or (5)
18	3rd Drawer take-up (PF-108/PF-110/PF-106)	(4) or (5)
19	4th Drawer transport (PF-108/PF-110/PF-106)	(4) or (5)
20	4th Drawer take-up (PF-108/PF-110/PF-106)	(4) or (5)
21	5th Drawer transport (PF-108/PF-110)	(4)
22	5th Drawer take-up (PF-108/PF-110)	(4)

✻ If a communications error occurs between UN2 and PWB-A during a copy cycle, it forces a paper misfeed condition (○ displayed on the Touch Panel). If that happens, check the circuit between UN2 and PWB-A for proper connection and, if it is intact, replace the board.

<Resetting the Display>

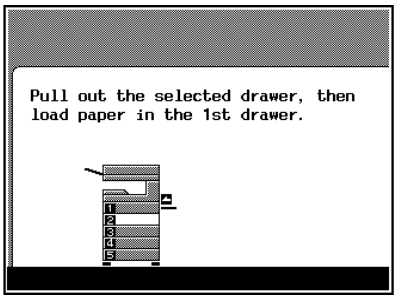
Misfeed in the copier	Misfeed in the option
Remove all sheets of paper misfed and left inside, and then open and close the Side Cover.	Remove all sheets of paper misfed and left inside, and then raise and lower or disconnect and reconnect the option.

✻ If the misfeed display is not reset by these procedures, check the misfeed detecting sensor at the paper location.

3-2. Size Error

The following warning screen appears after a misfeed display has been reset if the actual size of the paper loaded in a paper source differs from the paper size set for that particular paper source.

[1st to 5th Drawer]



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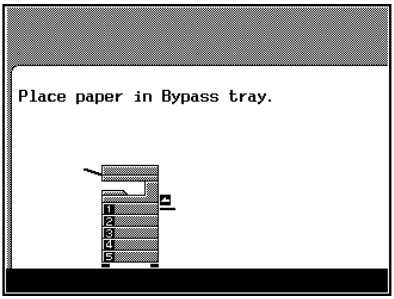
[Manual Bypass]



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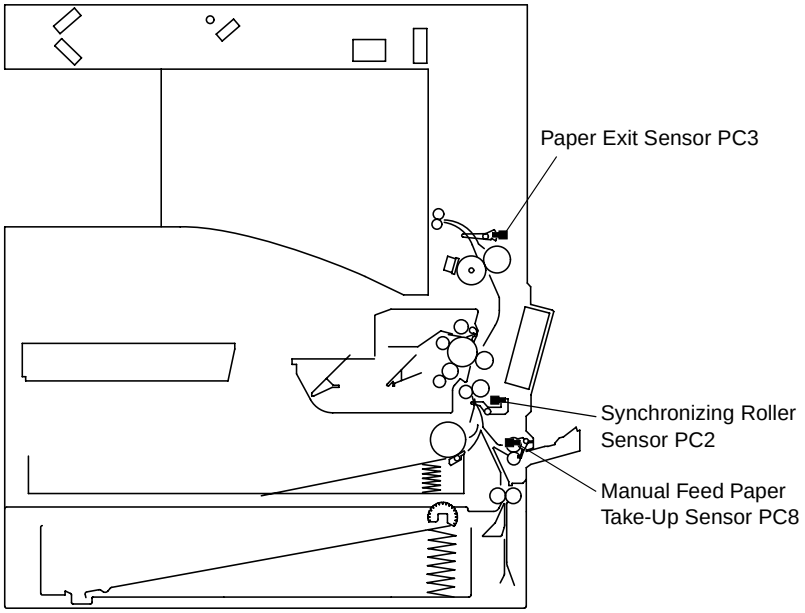
✻ 1st to 5th Drawer: A size error is indicated by a highlighted paper source in the copier overview display. (In the above example, there is a size error in the 2nd Drawer.)

<Resetting the Size Error Display>
Slide out the drawer, then slide it back in, or load paper in the Manual Bypass Tray.

<Causes of a Size Error>
- Wrong paper size settings have been made.
- The user loads paper of a size different from what is set for the paper source.
- Two or more sheets of paper are being taken up and fed in.

3-3. Misfeed Detection Sensor Layout



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3-4. Types of Misfeed Detection and Detection Timings

- The following are the types of misfeed detection and detection timings for different misfeed locations.

NOTE

For misfeed detection types and detection timings of options, see the relevant option service manual.

<Copier Take-Up Misfeed>

Type	Detection Timing	Timer Value T (sec.)
Paper take-up failure detection	• 1st Drawer paper take-up: Synchronizing Roller Sensor PC2 is not unblocked (H) even after the lapse of T sec. after Paper Take-Up Solenoid SL1 has been energized for the second paper take-up retry sequence.	1.28
	• 2nd Drawer paper take-up: PC2 is not unblocked (H) even after the lapse of T sec. after SL1 has been energized for the first paper take-up retry sequence.	2.27
	• 1st/2nd Drawer paper take-up: PC2 is unblocked (H) within T sec. after SL1 has been energized.	0.20

<Manual Bypass Take-Up Misfeed>

Type	Detection Timing	Timer Value T (sec.)
Bypass paper take-up failure detection	PC2 is not unblocked (H) even after T sec. after Manual Feed Paper Take-Up Clutch CL3 has been energized.	0.89
	PC2 is unblocked (H) within T sec. after CL3 has been energized.	0.20
Paper left	Manual Feed Paper Take-Up Sensor PC8 is blocked (L) when the Power Switch is turned ON, CPU is reset, or cover is opened and closed.	———

<Separator Misfeed>

Type	Detection Timing	Timer Value T (sec.)
Leading edge detection by Paper Exit Sensor PC3	PC3 is not blocked (L) even after the lapse of T sec. after PC2 has been unblocked (H).	1.92 ✻
Trailing edge detection by Synchronizing Roller Sensor PC2	PC2 is not blocked (L) even after the lapse of T sec. after it has been unblocked (H).	4.20 ✻
	PC2 is blocked (L) within T sec. after it has been unblocked (H).	1.05
Paper is stationary	During a sequence of detecting a paper size based on the period of time between when Synchronizing Clutch CL1 is energized and when PC2 is blocked (L), the paper size detected is longer than the size data sent from the controller by +260 mm or more.	———
Size error detection	The paper size detected based on the period of time between when CL1 is energized and when PC2 is blocked (L) is more than the size data sent from the controller by ±20 mm or more.	———
Paper left	PC2 is unblocked (H) when the Power Switch is turned ON, CPU is reset, or cover is opened and closed.	———

✻ Excludes the period of time during which the paper is stationary before the Synchronizing Roller.

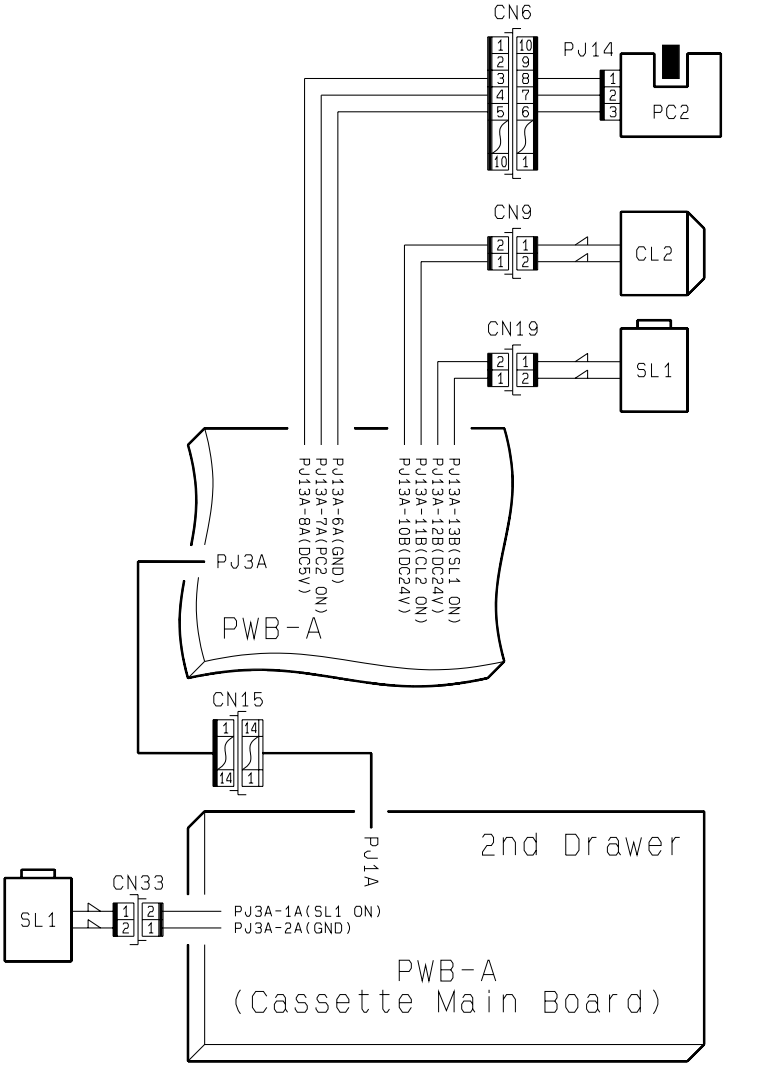
<Fusing Misfeed>

Type	Detection Timing	Timer Value T (sec.)
Trailing edge detection by Paper Exit Sensor PC3	PC3 is not unblocked (H) even after the lapse of T sec. after PC2 has been blocked (L).	1.96
Paper left	PC3 is blocked (L) when the Power Switch is turned ON, CPU is reset, or cover is opened and closed.	———

3-5. Misfeed Troubleshooting Procedures

(1) Copier Take-Up Misfeed

Relevant Electrical Parts	
Paper Take-Up Solenoid SL1	Master Board PWB-A
Synchronizing Roller Sensor PC2	Cassette Main Board PWB-A



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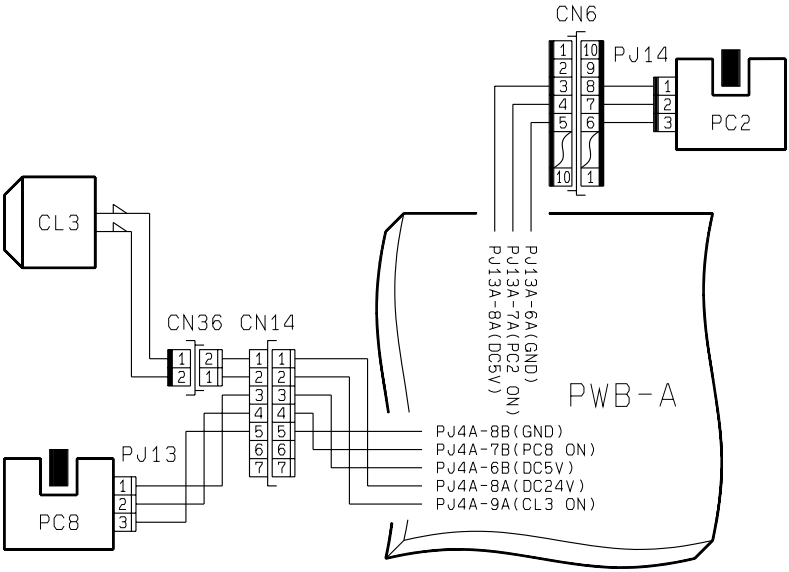
<Copier Take-Up Misfeed Troubleshooting Procedure>

Symptom	Step	Check Item	Result	Action
Paper is not taken up at all.	1	Does the paper being used meet the product specifications?	NO	Instruct the user to use the paper that meets product specifications.
	2	Is the paper curled, wavy, or damp?	YES	Change the paper. Instruct the user on the storage of paper.
	3	Are the Edge Guide and Trailing Edge Stop (of the drawer) positioned to the exact size of the paper used?	NO	Slide the guides to the exact size of the paper.
	4	Is the Paper Take-Up Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Take-Up Roll.
	5	If the Paper Lifting Plate dirty or deformed?	YES	Clean or change the Paper Lifting Plate.
	6	Has the misfeed been detected while the Multi Purpose Cassette was being used?	YES	Check steps 7 and 8.
			NO	Check steps 9 and onward.
	7	Is the Paper Separator Pad deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Separator Pad.
	8	Check SL1 for operation. Does the voltage across CN19-1 on the PWB-A side and GND change from DC24V to DC0V when the Start key is pressed?	YES	Check various parts for possible overload and, if they are okay, change SL1.
			NO	Change PWB-A.
	9	Is the Paper Separator Finger dirty or deformed?	YES	Clean or change the Paper Separator Finger.
	10	Check CL2 for operation. Does the voltage across CN9-1 on the PWB-A side and GND change from DC24V to DC0V when the Start key is pressed?	NO	Change PWB-A.
	11	Check SL1 for operation. Does the voltage across PJ3A-1A on PWB-A (Cassette Main Board) and GND change from LOW to HIGH when the Start key is pressed?	YES	Check various parts for possible overload and, if they are okay, change SL1 or CL2.
			NO	Change PWB-A (Cassette Main Board) or PWB-A.
• Paper is at a stop before the vertical transport section. • Paper is at a stop near the Synchronizing Rollers.	1	Is the Vertical Transport Roller deformed, worn, or dirty with paper dust?	YES	Clean or change the Vertical Transport Roller.
	2	If the Vertical Transport Guide Plate dirty or deformed?	YES	Clean or change the Vertical Transport Guide Plate.
	3	Is PC2 fully operational? Check the input data using I/O Check.	YES	Check various parts for possible overload and, if they are okay, change PWB-A.
			NO	Check the PC2 actuator for operation and, if it is intact, change PC2.

(2) Manual Bypass Take-Up Misfeed

Relevant Electrical Parts	
Manual Feed Paper Take-Up Clutch CL3 Synchronizing Roller Sensor PC2	Manual Feed Paper Take-Up Sensor PC8 Master Board PWB-A

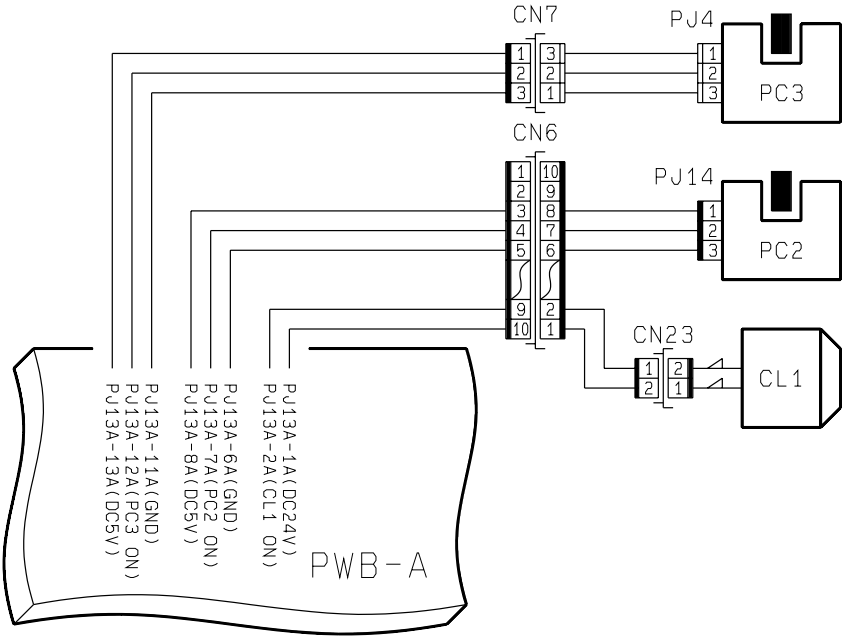


<Manual Bypass Take-Up Misfeed Troubleshooting Procedure>

Symptom	Step	Check Item	Result	Action
Paper is not taken up at all.	1	Does the paper being used meet the product specifications?	NO	Instruct the user to use the paper that meets product specifications.
	2	Is the paper curled, wavy, or damp?	YES	Change the paper. Instruct the user on the storage of paper.
	3	Is the Manual Feed Paper Take-Up Roller or Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Manual Feed Paper Take-Up Roller or Roll.
	4	Is PC8 fully operational? Check the input data using I/O Check.	NO	Check the PC8 actuator for operation and, if it is intact, change PC8.
	5	Check CL3 for operation. Does the voltage across CN14-2 and GND change from DC24V to DC0V when the misfeed condition is reset?	YES	Check various parts for possible overload and, if they are okay, change CL3.
			NO	Change PWB-A.
Paper is at a stop near the Synchronizing Rollers.	1	Is PC2 fully operational? Check the input data using I/O Check.	YES	Check various parts for possible overload and, if they are okay, change PWB-A.
			NO	Check the PC2 actuator for operation and, if it is intact, change PC2.

(3) Separator/Fusing Misfeed

Relevant Electrical Parts	
Paper Exit Sensor PC3	Synchronizing Clutch CL1
Synchronizing Roller Sensor PC2	Master Board PWB-A



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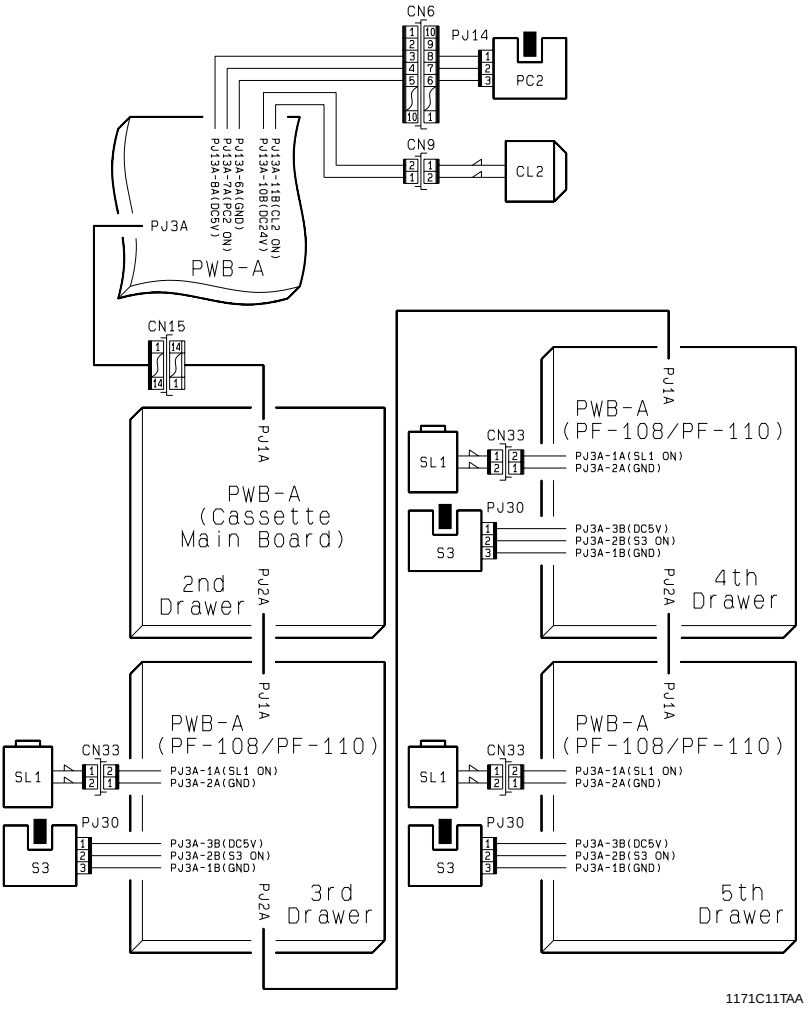
<Separator/Fusing Misfeed Troubleshooting Procedure>

Symptom	Step	Check Item	Result	Action
Paper is at a stop near the Synchronizing Rollers.	1	Are the Synchronizing Rollers deformed, worn, or dirty with paper dust?	YES	Clean or change the Synchronizing Rollers.
	2	Is a good length of loop formed before the Synchronizing Rollers?	NO	Select the following functions in this order: Tech. Rep. Mode → Tech. Rep. Choice → Printer → Loop Adjustment and make the loop adjustment.
	3	Is a size error displayed when the misfeed display is reset?	YES	Check that the size of the paper actually loaded in the current paper source matches the size set for it.
	4	Is PC2 fully operational? Check the input data using I/O Check.	NO	Check the PC2 actuator for operation and, if it is intact, change PC2.
	5	Check CL1 for operation. Does the voltage across CN6-9 on the PWB-A side and GND change from DC24V to DC0V when the Start key is pressed?	YES	Check various parts for possible overload and, if they are okay, change CL1.
			NO	Change PWB-A.
Paper is at a stop near the PC Drum.	1	Is the Pre-Image Transfer Guide Plate dirty or deformed?	YES	Clean or change the guide plate.
	2	Is the Image Transfer Roller deformed, worn, or dirty with paper dust?	YES	Clean or change the Image Transfer Roller.
Paper is wedged at the PC Drum Paper Separator Fingers.	1	Are the PC Drum Paper Separator Fingers dirty or deformed?	YES	Clean or change the separator fingers.
			NO	Check the clearance between the PC Drum Paper Separator Fingers and PC Drum.
Paper is at a stop before the Fusing Rollers.	1	Is the Fusing Guide Plate dirty or deformed?	YES	Clean or change the Fusing Guide Plate.
Paper is at a stop at the Fusing Rollers.	1	Are the Fusing Rollers deformed, worn, or dirty with paper dust?	YES	Clean or change the Fusing Rollers.
	2	Are the Fusing Separator Fingers dirty or deformed?	YES	Clean, correct, or change the Fusing Separator Fingers.
Paper is at a stop at the exit section.	1	Is the Paper Exit Roller deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Exit Roller.
	2	Is PC3 fully operational? Check the input data using I/O Check.	YES	Check various parts for possible overload and, if they are okay, change PWB-A.
			NO	Check the PC3 actuator for operation and, if it is intact, change PC3.

(4) Paper Take-Up/Transport Misfeed (PF-108/PF-110)

Relevant Electrical Parts	
Paper Take-Up Solenoid SL1	Master Board PWB-A
Take-Up Sensor S3	Cassette Main Board PWB-A
Synchronizing Roller Sensor PC2	Cassette Main Board PWB-A: PF-108/PF-110
Transport Clutch CL2	

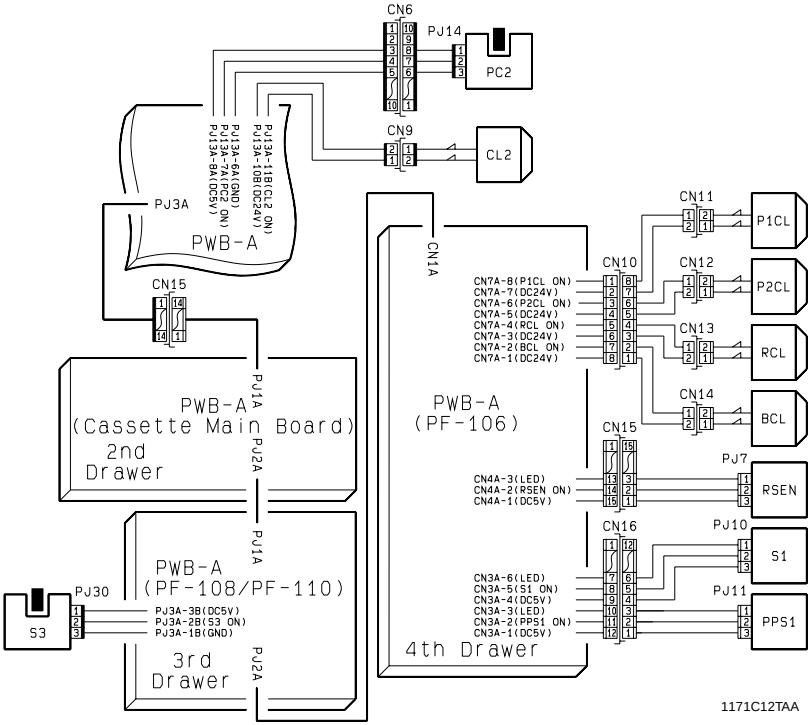


<Paper Take-Up/Transport Misfeed (PF-108/PF-110) Troubleshooting Procedure>

Symptom	Step	Check Item	Result	Action
Paper is not taken up at all.	1	Does the paper being used meet the product specifications?	NO	Instruct the user to use the paper that meets product specifications.
	2	Is the paper curled, wavy, or damp?	YES	Change the paper. Instruct the user on the storage of paper.
	3	Are the Edge Guide and Trailing Edge Stop (of the drawer) positioned to the exact size of the paper used?	NO	Slide the guides to the exact size of the paper.
	4	Is the Paper Take-Up Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Take-Up Roll.
	5	Is the Paper Lifting Plate dirty or deformed?	YES	Clean or change the Paper Lifting Plate.
	6	Is the Paper Separator Finger dirty or deformed?	YES	Clean or change the Paper Separator Finger.
	7	Check CL2 for operation. Does the voltage across CN9-1 on the PWB-A side and GND change from DC24V to DC0V when the Start key is pressed?	NO	Change PWB-A.
	8	Check SL1 for operation. Does the voltage across PJ3A-1A on PWB-A (PF-108/PF-110) and GND change from LOW to HIGH when the Start key is pressed?	YES	Check various parts for possible overload and, if they are okay, change SL1 or CL2.
			NO	Change PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.
• Paper is at a stop at the vertical transport section. • Paper is at a stop near the Synchronizing Rollers.	1	Is the Vertical Transport Roller deformed, worn, or dirty with paper dust?	YES	Clean or change the Vertical Transport Roller.
	2	Is the Vertical Transport Guide Plate dirty or deformed?	YES	Clean or change the Vertical Transport Guide Plate.
	3	Is a size error displayed when the misfeed display is reset?	YES	Check that the size of the paper loaded in the current drawer matches the size set for that drawer.
	4	✻ A misfeed is detected at the transport section of the 3rd Drawer. Is PC2 fully operational? Check the input data using I/O Check.	NO	Check the PC2 actuator for operation and, if it is intact, change PC2.
	5	Are all S3's fully operational? Check the input data using I/O Check.	YES	Check various parts for possible overload and, if they are okay, change PWB-A.
	6	Does the voltage across PJ3A-2B on PWB-A (PF-108/PF-110) and GND change to DC0V when S3 is blocked and to DC5V when S3 is unblocked?	YES	Change PWB-A (PF-108/PF-110) or PWB-A (Cassette Main Board).
			NO	Check the S3 actuator for operation and, if it is intact, change S3.

(5) Paper Take-Up/Transport Misfeed (PF-106)

Relevant Electrical Parts	
Take-Up Clutch 1 P1CL	Synchronizing Roller Sensor PC2
Take-Up Clutch 2 P2CL	Transport Clutch CL2
Paper Empty Sensor 1 PPS1	Take-Up Sensor S3
Paper Standby Position Sensor S1	LCC Main Board PWB-A: PF-106
Separator Clutch BCL	Cassette Main Board PWB-A: PF-108/PF-110
Registration Clutch RCL	Cassette Main Board PWB-A
Registration Sensor RSEN	Master Board PWB-A



<Paper Take-Up/Transport Misfeed (PF-106) Troubleshooting Procedure>

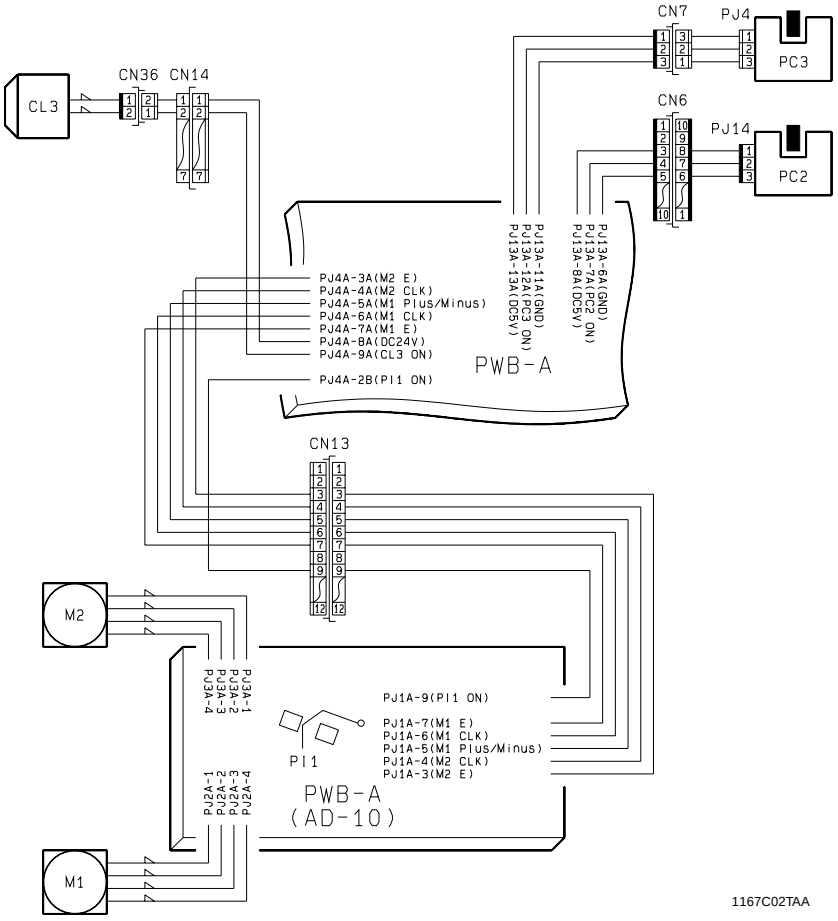
Symptom	Step	Check Item	Result	Action
• Paper is not taken up at all. • Paper is at a stop before the Paper Feed/ Separator Rolls.	1	Does the paper being used meet the product specifications?	NO	Instruct the user to use the paper that meets product specifications.
	2	Is the paper curled, wavy, or damp?	YES	Change the paper. Instruct the user on the storage of paper.
	3	Is the Paper Take-Up Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Take-Up Roll.

Symptom	Step	Check Item	Result	Action
• Paper is not taken up at all. • Paper is at a stop before the Paper Feed/ Separator Rolls.	4	Is PPS1 fully operational? Check the input data using I/O Check.	YES	Perform steps 6 and onward.
	5	Does the voltage across CN3A-2 on PWB-A (PF-106) and GND change from LOW to HIGH when PPS1 is blocked?	YES	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order.
			NO	Change PPS1.
	6	Is paper fed up to S1 when paper is loaded in Lift 2 only and the drawer is slid into the copier?	YES	Perform steps 8 and onward.
	7	Check P2CL for operation. Does the voltage across CN7A-6 on PWB-A (PF-106) and GND change from DC24V to DC0V when step 6 is performed again?	YES	Check various parts for possible overload and, if they are okay, change P2CL.
			NO	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.
	8	Check P1CL for operation. Does the voltage across CN7A-8 on PWB-A (PF-106) and GND change from DC24V to DC0V when step 6 is performed again?	NO	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.
	9	Is S1 fully operational? Check the input data using I/O Check. Does the "S1S" input signal change from 0 to 1 when the drawer loaded with paper is slid into the copier?	YES	Perform steps 11 and onward.
	10	Does the voltage across CN3A-5 on PWB-A (PF-106) and GND change from LOW to HIGH when step 9 is performed again?	YES	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order.
			NO	Change S1.
	11	Is the Paper Feed Roll or Separator Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Feed Roll or Separator Roll.
	12	Check BCL for operation. Does the voltage across CN7A-2 on PWB-A (PF-106) and GND change from DC24V to DC0V when the Start key is pressed?	YES	Check various parts for possible overload and, if they are okay, change P1CL or BCL.
			NO	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.

Symptom	Step	Check Item	Result	Action
• Paper is at a stop at the vertical transport section. • Paper is at a stop near the Synchronizing Rollers.	1	Is the Vertical Transport Roller or Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Vertical Transport Roller or Roll.
	2	Is RSEN fully operational? Check the input data using I/O Check.	YES	Check step 4 and onward.
	3	Does the voltage across CN4A-2 on PWB-A (PF-106) and GND change from LOW to HIGH when RSEN is blocked?	YES	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order.
			NO	Change RSEN.
	4	Check RCL for operation. Does the voltage across CN7A-4 on PWB-A (PF-106) and GND change from DC24V to DC0V when the Start key is pressed?	NO	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.
	5	Check CL2 for operation. Does the voltage across CN9-1 on PWB-A and GND change from DC24V to DC0V when the Start key is pressed?	NO	Change PWB-A.
	6	✻ If the 3rd Drawer is PF-106 Is PC2 fully operational? Check the input data using I/O Check.	YES	Check various parts for possible overload and, if they are okay, change RCL, CL2, or PWB-A, in that order.
			NO	Check the PC2 actuator for operation and, if it is intact, change PC2.
	7	✻ If the 4th Drawer is PF-106 Is S3 fully operational? Check the input data using I/O Check.	YES	Check various parts for possible overload and, if they are okay, change RCL, CL2, or PWB-A, in that order.
	8	Does the voltage across PJ3A-2B on PWB-A (PF-108/PF-110) and GND change to DC0V when S3 is blocked and to DC5V when S3 is unblocked?	YES	Change PWB-A (PF-108/PF-110) or PWB-A (Cassette Main Board).
			NO	Check the S3 actuator for operation and, if it is intact, change S3.

(6) Duplex Turnover/Take-Up Misfeed (AD-10)

Relevant Electrical Parts	
Paper Exit Sensor PC3	Duplex Unit Transport Motor M2
Duplex Unit Transport Sensor PI1	Manual Feed Paper Take-Up Clutch CL3
Synchronizing Roller Sensor PC2	Master Board PWB-A
Switchback Motor M1	Duplex Main Board PWB-A: AD-10



<Duplex Turnover/Take-Up Misfeed (AD-10) Troubleshooting Procedure>

Symptom	Step	Check Item	Result	Action
Paper is at a stop near the exit section.	1	Is the Paper Exit Roller deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Exit Roller.
	2	Is PC3 fully operational? Check the input data using I/O Check.	NO	Check the PC3 actuator for operation and, if it is intact, change PC3.
	3	Check M1 for operation. Does the voltage across PJ1A-7 on PWB-A (AD-10) and GND change from DC5V to DC0V during a 2-sided copy cycle?	YES	Check gears for proper engagement.
			NO	Change PWB-A.
	4	Does the voltage across PJ1A-5 on PWB-A (AD-10) and GND change from DC5V to DC0V during a 2-sided copy cycle?	YES	Check various parts for possible overload and, if they are okay, change M1 or PWB-A (AD-10).
			NO	Change PWB-A.
Paper is at a stop inside the Duplex Unit.	1	Is the Duplex Unit Transport Roller or Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Duplex Unit Transport Roller or Roll.
	2	Is a torn piece of paper present on the paper path surface?	YES	Remove the torn piece of paper.
	3	Is the Manual Feed Take-Up Roller or Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Manual Feed Take-Up Roller or Roll.
	4	Check M2 for operation. Does the voltage across PJ1A-3 on PWB-A (AD-10) and GND change from DC5V to DC0V during a 2-sided copy cycle?	YES	Check gears for proper engagement.
			NO	Change PWB-A.
	5	Is PI1 fully operational? Check the input data using I/O Check.	NO	Check the PI1 actuator for operation and, if it is intact, change PWB-A (AD-10).
	6	Check CL3 for operation. Does the voltage across CN14-2 and GND change from DC24V to DC0V when paper is taken up from the Duplex Unit?	YES	Check various parts for possible overload and, if they are okay, change CL3 or M2.
			NO	Change PWB-A.
Paper is at a stop near the Synchronizing Rollers.	1	Is PC2 fully operational? Check the input data using I/O Check.	YES	Check various parts for possible overload and, if they are okay, change PWB-A.
			NO	Check the PC2 actuator for operation and, if it is intact, change PC2.

4 MALFUNCTION

The copier CPU has a function that self-diagnoses the copier conditions. On detection of a malfunction, the corresponding code representing a particular malfunction name, location, and details as listed below is displayed on the Touch Panel together with a Tech. Rep. call message.

- Perform the following steps to reset the malfunction.

Malfunction Resetting Procedure

- Turn OFF, then ON the Power Switch or open and close the Side Cover for all malfunctions except fusing-related ones (C05**).
- Use "Trouble Reset" of the "Initial" screen to reset all malfunctions including fusing-related ones (C05**).

4-1. Detection Timing by Malfunction Code

Code	Description	Detection Timing
C0000	Main Motor M2 malfunction	The Lock signal remains HIGH for a continuous 1-sec. period or more while M2 remains energized.
C0010	I/C Motor M1 malfunction	The Lock signal remains HIGH for a continuous 1-sec. period or more while M1 remains energized.
C0045	Fusing Cooling Fan Motor M3 malfunction	The Lock signal remains HIGH or LOW for a continuous 1-sec. period or more while M3 remains energized.
C004C	Ozone Fan Motor M8 malfunction	The Lock signal remains HIGH or LOW for a continuous 1-sec. period or more while M8 remains energized.
C004E	Power Unit Cooling Fan Motor M4	The Lock signal (analog input voltage) remains 0.4V or less for a continuous 0.5-sec. period or more while M4 remains energized.
C0070	Main Hopper Toner Replenishing Motor M6 malfunction	• Toner Bottle Home Position Sensor PC10 remains blocked (L) for a continuous 2-sec. period or more while M6 remains energized. • PC10 remains unblocked (H) for a continuous 6-sec. period or more while M6 remains energized.
C0050	Warming-up failure	The temperature of the Fusing Rollers do not reach the required level even after the lapse of a given period of time during a warming-up cycle. • From room temperature to 100°C: Within 65 sec. • From 100°C to 140°C: Within 25 sec. • From 140°C to 170°C: Within 20 sec. • From 170°C to the completion of warming-up: Within 22 sec.
C0510	Abnormally low fusing temperature	• The fusing temperature remains 130°C or less for a continuous 0.1-sec. period or more during the standby state or printing. • The fusing temperature remains 80°C or less for a continuous 2-min. period or more during the low-temperature standby state.
C0520	Abnormally high fusing temperature	The fusing temperature remains 230°C or more for a continuous 0.1-sec. period or more.

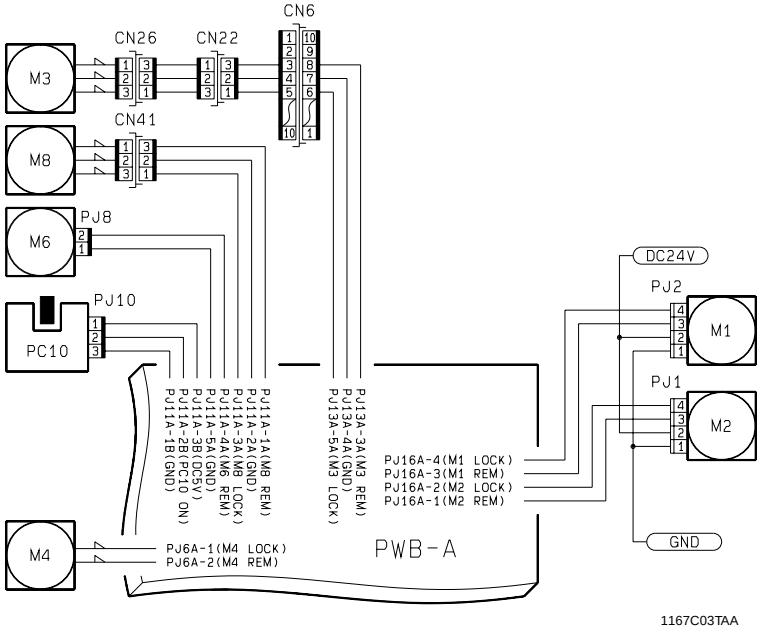
Code	Description	Detection Timing
C0650	Faulty Scanner Home Position Sensor 1 PC12	<The Power Switch is turned ON, Original Cover lowered, or Start key pressed when the Scanner is at its home position> • PC12 is not unblocked (H) even when the Scanner moves 10 mm to the left. • PC12 is not blocked (L) even when the Scanner moves 4 mm to the right after PC12 has been unblocked (H). <The Power Switch is turned ON, Original Cover lowered, or Start key pressed when the Scanner is at any position other than home> • PC12 is not blocked (L) even when the Scanner moves 469.5 mm to the right.
C0651	Faulty Scanner Home Position Sensor 2 PC13	When the Start key is pressed with a document loaded in the Document Feed Tray of AF-7, PC13 is not blocked (L) even when the Scanner moves 463 mm to the left after PC12 has been unblocked (H).
C0990	LCC Lift-Up Motor EMOT malfunction (PF-106)	✻ See option service manual.
C0991	Lift 1 ascent motion failure (PF-106)	
C0995	LCC Transport Motor HMOT malfunction (PF-106)	
C0999	Lift 2 ascent motion failure (PF-106)	
C099D	Communications error (PF-106)	
C0B00	Transport Motor M1 drive malfunction (FN-100/FN-500)	
C0B0F	Paper Entrance Switching Motor M1 drive malfunction (FN-100/FN-500)	
C0B30	CD Aligning Motor M4 drive malfunction (FN-100/FN-500)	
C0B38	Shift Motor M5 drive malfunction (FN-100/FN-500)	
C0B4D	Paper Holding Tray Motor M10 drive malfunction (FN-100/FN-500)	
C0B4E	Finisher Tray Motor M8 drive malfunction (FN-100/FN-500)	
C0B50	Stapling Motor drive malfunction (FN-100/FN-500)	
C0BA0	Elevator Motor M9 drive malfunction (FN-100/FN-500)	
C0F32	Faulty ATDC Sensor E1	The value of data read by E1 is faulty. [E1 reading is 7% or less (3.92V or more) or 19% or more (1.41V or less).]

Code	Description	Detection Timing
C0F33	ATDC adjustment failure	• In an F8 (ATDC control voltage automatic adjustment) operation, the adjustment of ATDC control voltage is not completed within 1 min. after E1 sampling. • In an F8 operation, the control voltage falls outside the range of 5.39V to 8.15V.
C1038	Engine connection error	• The system fails in checking initial engine connection when Power Switch S1 is turned ON. • The system succeeded in checking initial connection when S1 was turned ON; then it fails in rechecking initial connection through the execution of a software reset when a communications error occurs during operation.
C1300	Polygon Motor M10 malfunction	<Resolution selection failure detection> • The Lock signal is not detected for a given period of time after the resolution has been selected. (The Lock signal is not, however, detected for 1 sec. after the start.) <Faulty Lock signal detection> • No Lock signals are detected for the 1-sec. period which starts 1 sec. after the first Lock. ✻ First Lock: The first Lock signal following 1 sec. after the selection of start or half speed. <Out-of-timing Lock detection> • The Lock signal is not detected for a continuous 0.5-sec. period while M10 is in the stabilized turning state (after a Lock has been detected). <Abnormal Lock detection> • The Lock signal remains ON for a continuous 5-sec. period while M10 remains deenergized.
C133A	Communications error (G/A)	———
C133B	Communications error (option I/F)	———
C13C0	I/C initialization failure	After failing to blow the imaging cartridge fuse 2 consecutive times, 3.6V or more is detected and the I/C is determined to be new.
C13D0	Faulty EEPROM	No initial data is written in EEPROM.
C13F0	HSYNC detection failure	• The SOS rising edge is not detected even after the lapse of 0.2 sec. after Polygon Motor M10 has started and laser output started. • No SOS rising edges are detected while VIA remains ON.

4-2. Troubleshooting Procedures by Malfunction Code

(1) C0000: M2 Malfunction
C0010: M1 Malfunction
C0045: M3 Malfunction
C004C: M8 Malfunction
C004E: M4 Malfunction
C0070: M6 Malfunction

Relevant Electrical Parts	
I/C Motor M1	Main Hopper Toner Replenishing Motor M6
Main Motor M2	Ozone Fan Motor M8
Fusing Cooling Fan Motor M3	Toner Bottle Home Position Sensor PC10
Power Unit Cooling Fan Motor M4	Master Board PWB-A



C0000

Step	Check Item	Result	Action
1	Does M2 turn after the malfunction has been reset?	NO	Check various parts for possible overload.
2	Check M2 for operation. Does the voltage across PJ1-3 of M2 and GND change from DC5V to DC0V after the malfunction has been reset?	NO	Change PWB-A.
3	Does the voltage across PJ1-4 of M2 and GND change from DC5V to DC0V after the malfunction has been reset?	YES	Change PWB-A.
		NO	Change M2.

C0010

Step	Check Item	Result	Action
1	Does M1 turn after the malfunction has been reset?	NO	Check various parts for possible overload.
2	Check M1 for operation. Does the voltage across PJ2-3 of M1 and GND change from DC5V to DC0V after the malfunction has been reset?	NO	Change PWB-A.
3	Does the voltage across PJ2-4 of M1 and GND change from DC5V to DC0V after the malfunction has been reset?	YES	Change PWB-A.
		NO	Change M14.

C0045

Step	Check Item	Result	Action
1	Does M3 turn after the malfunction has been reset?	NO	Check the connector and harness between M3 and PWB-A.
2	Check M3 for operation. Does the voltage across CN6-8 on the PWB-A side and GND change from DC0V to DC24V after the malfunction has been reset?	NO	Change PWB-A.
3	Does the “C0045” display persist even after M3 has been replaced with a new one?	YES	Change PWB-A.

C004C

Step	Check Item	Result	Action
1	Does M8 turn after the malfunction has been reset?	NO	Check various parts for possible overload.
2	Check M8 for operation. Does the voltage across CN41-3 on the PWB-A side and GND change from DC0V to DC24V after the malfunction has been reset?	NO	Change PWB-A.
3	Does the “C004C” display persist even after M8 has been replaced with a new one?	YES	Change PWB-A.

C004E

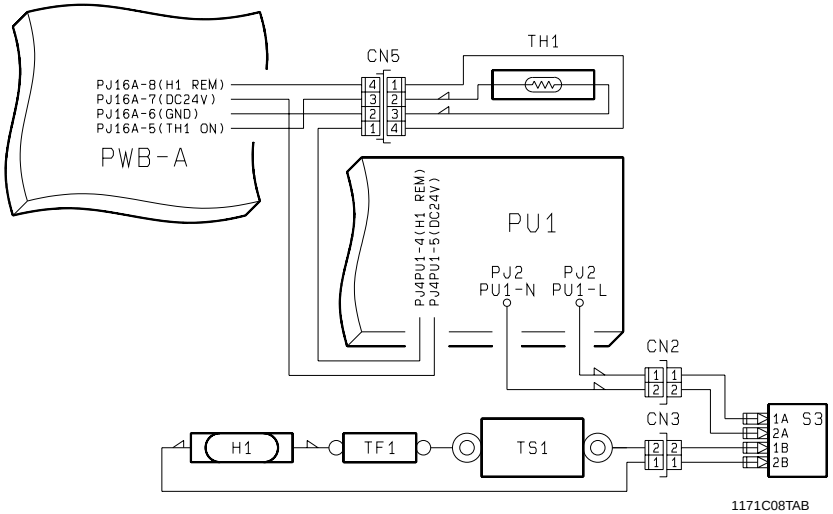
Step	Check Item	Result	Action
1	Does M4 turn after the malfunction has been reset?	YES	Change PWB-A.
2	Does the “C004E” display persist even after M4 has been replaced with a new one?	YES	Change PWB-A.

C0070

Step	Check Item	Result	Action
1	After the malfunction has been reset, remove the Rear Lower Cover and block Toner Bottle Cover Sensor PC11. Then, unlocking the Toner Bottle Lock Lever, turn the Toner Bottle a half turn by hand. Does the Toner Bottle turn when PC11 is unblocked (H) with the Toner Bottle Lock Lever kept unlocked?	YES	Perform step 3.
		NO	Check various parts for possible overload.
2	Does the voltage across PJ8-2 of M6 and GND change from DC0V to DC24V when step 1 is performed again?	YES	Change M6.
		NO	Change PWB-A.
3	Is PC10 fully operational? Check the input data using I/O Check. Does the input signal value for “Toner Bottle Set” change between “0” and “1” when the Toner Bottle is turned by hand?	YES	Change PWB-A.
		NO	Change PC10.

(2) C0500: Warming-up Failure
C0510: Abnormally Low Fusing Temperature
C0520: Abnormally High Fusing Temperature

Relevant Electrical Parts	
Fusing Roller Heater Lamp H1	Fusing Roller Heater Lamp Fuse TF1
Fusing Roller Thermistor TH1	Side Cover Interlock Switch 2 S3
Fusing Roller Thermostat TS1	Power Supply Unit 1 PU1
	Master Board PWB-A



C0500, C0510

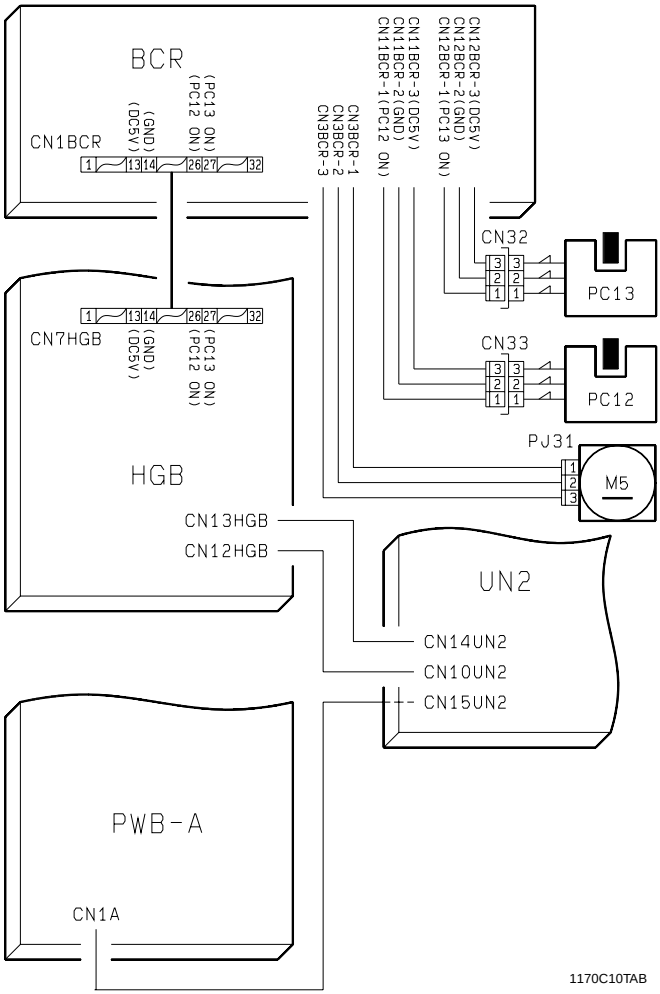
Step	Check Item	Result	Action
1	Does H1 turn ON after the malfunction is reset?	YES	Check TH1 for contamination or installation.
2	Is there continuity across CN3-1 and 2 on the Fusing Unit end with CN3 (2P) disconnected?	NO	Check H1, TS1, and TF1 for continuity.
3	Is there continuity across 1A and 1B, and across 2A and 2B, of S3 when S3 is turned ON?	NO	Change S3.
4	Is the resistance of TH1 (across CN5-2 and 3 on the Fusing Unit end) infinity?	YES	Change TH1.
5	Is Fuse F2 on PU1 conducting?	YES	Change PU1 or PWB-A.
		NO	Change the fuse.

C0520

Step	Check Item	Result	Action
1	Is TH1 installed properly?	NO	Install TH1 correctly.
2	Is TH1 dirty?	YES	Clean or change TH1.
3	Is the circuit across CN5-2 and 3 on the Fusing Unit end closed when CN5 (4P) is disconnected?	YES	Change TH1.
		NO	Change PWB-A or PU1.

(3) C0650: Faulty PC12
C0651: Faulty PC13

Relevant Electrical Parts	
Scanner Home Position Sensor 1 PC12	BCR Board BCR
Scanner Home Position Sensor 2 PC13	HGB Board HGB
Scanner Motor M5	MFB Board UN2
Master Board PWB-A	

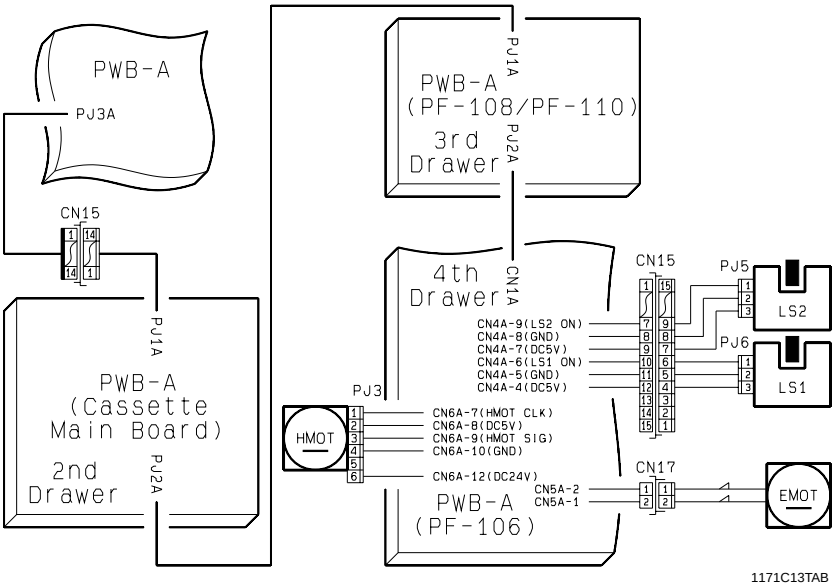


C0650, C0651

Step	Check Item	Result	Action
1	Is M5 energized? Select the following functions in this order: Tech. Rep. Mode → Movement Check → Scanner. Then, enter an appropriate value in “Absolute Position” or “Relative Position” and energize M5.	NO	Check various parts for possible overload and, if they are okay, change M5, BCR, HGB, UN2, or PWB-A, in that order.
2	Is “C0650” being displayed?	YES	Perform steps 3 and 4.
		NO	Perform steps 5 and 6.
3	Does the voltage across CN11BCR-1 on BCR and GND change from DC0V to DC5V when step 1 is performed a second time and PC12 is unblocked?	NO	Change PC12.
4	Does the voltage across CN1BCR-26 on BCR and GND change from DC0V to DC5V when step 3 is performed a second time?	YES	Change HGB, UN2, or PWB-A, in that order.
		NO	Change BCR.
5	Does the voltage across CN12BCR-1 on BCR and GND change from DC5V to DC0V when step 1 is performed a third time and PC13 is unblocked?	NO	Change PC13.
6	Does the voltage across CN1BCR-27 on BCR and GND change from DC0V to DC5V when step 5 is performed a second time?	YES	Change HGB, UN2, or PWB-A, in that order.
		NO	Change BCR.

(4) C0990: EMOT Malfunction
C0991: Lift 1 Ascent Motion Failure
C0995: HMOT Malfunction
C0999: Lift 2 Ascent Motion Failure
C099D: Communications Error

Relevant Electrical Parts	
LCC Lift-Up Motor EMOT	LCC Main Board PWB-A: PF-106
Lift-Up Sensor 1 LS1	Cassette Main Board PWB-A: PF-108/PF-110
Lift-Up Sensor 2 LS2	Cassette Main Board PWB-A
LCC Transport Motor HMOT	Master Board PWB-A



C0990

Step	Check Item	Result	Action
1	Does “C0990” reappear even after EMOT has been replaced with a new one?	YES	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.

C0991

Step	Check Item	Result	Action
1	Is LS1 fully operational? Check the input data using I/O Check.	YES	Perform step 3 and onward.
2	Does the voltage across CN4A-6 on PWB-A (PF-106) and GND change to DC5V when LS1 is blocked and to DC0V when LS1 is unblocked?	YES	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order.
		NO	Change LS1.
3	Does EMOT turn when a drawer loaded with paper is slid into the copier?	YES	Check gears and couplings for proper engagement and, if they are okay, change PWB-A.
4	Does the voltage across CN5A-1 on PWB-A (PF-106) and GND change from DC0V to DC24V when step 3 is performed again?	YES	Check various parts for possible overload and, if they are okay, change EMOT.
		NO	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.

C0995

Step	Check Item	Result	Action
1	Does “C0995” reappear even after HMOT has been replaced with a new one?	YES	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.

C0999

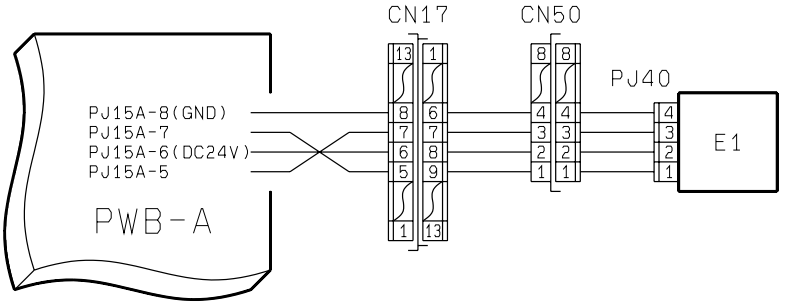
Step	Check Item	Result	Action
1	Is LS2 fully operational? Check the input data using I/O Check.	YES	Perform step 3 and onward.
2	Does the voltage across CN4A-9 on PWB-A (PF-106) and GND change to DC5V when LS2 is blocked and to DC0V when LS2 is unblocked?	YES	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order.
		NO	Change LS2.
3	Does EMOT turn when a drawer loaded with paper is slid into the copier?	YES	Check gears and couplings for proper engagement and, if they are okay, change PWB-A.
4	Does the voltage across CN5A-1 on PWB-A (PF-106) and GND change from DC0V to DC24V when step 3 is performed again?	YES	Check various parts for possible overload and, if they are okay, change EMOT.
		NO	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.

C099D

Step	Check Item	Result	Action
1	Does “C099D” reappear even after PWB-A (PF-106) has been replaced with a new one?	YES	Change PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.

(5) C0F32: Faulty E1
C0F33: ATDC Adjustment Failure

Relevant Electrical Parts	
ATDC Sensor E1	Master Board PWB-A



C0F32, C0F33

Step	Check Item	Result	Action
1	Are PJ40, CN50, CN17, and PWB-A PJ15A connected properly?	NO	Connect them properly.
2	Is the CN50 connection dirty?	YES	Clean.
3	Is “C0F32” or “C0F33” displayed even when an I/C with the same T/C as that of a new one has been installed?	NO	Change the I/C with a new one.
4	Is “C0F32” or “C0F33” displayed even when an I/C with the same T/C as that of a new one has been installed and an F8 operation run? (Be sure to record the ATDC control voltage setting value if an F8 operation is to be run.)	YES	Change PWB-A, install the old I/C, and return the ATDC control voltage setting to the value recorded. If “C0F32” or “C0F33” redisplayed, change the I/C with a new one.
		NO	Change the I/C with a new one.

(6) C10✻✻ to C13✻✻

- These malfunctions are concerned with faulty symptoms as they relate to software, hardware, and communications. For remedial actions, change the board, check for cable connections, and turn the Power Switch OFF and ON.

Code	Action
C1038	1. Check the connection between PWB-A and UN2, reset the malfunction, and turn OFF and ON the Power Switch. 2. If the same malfunction persists, change PWB-A or UN2.
C1300	1. Reset the malfunction and turn OFF and ON the Power Switch. 2. If the same malfunction persists, check the harnesses and PJs between PH Unit and PWB-A and, if they are intact, change PH Unit or PWB-A, in that order.
C133A	1. Reset the malfunction and turn OFF and ON the Power Switch. 2. If the same malfunction persists, check the connection between the copier PWB-A and A to E below: A. 2nd Drawer paper source unit B. 3rd Drawer paper source unit (PF-108/PF-110/PF-106) C. 4th Drawer paper source unit (PF-108/PF-110/PF-106) D. 5th Drawer paper source unit (PF-108/PF-110) E. Job Tray (JS-200) or shift Tray (OT-100) 3. If the connection is made properly, unplug the connector between the copier and A to E and turn OFF and ON the Power Switch. →If the malfunction code display persists, change the copier PWB-A. →If the malfunction is no longer detected, connect the connectors sequentially and turn OFF and ON the Power Switch. When “C133A” is detected, check the connector of the corresponding paper source unit and, if it is intact, change the PWB-A of the unit.
C133B	1. Reset the malfunction and turn OFF and ON the Power Switch. 2. If the same malfunction persists, check the connection between the copier PWB-A and Finisher PWB-A. 3. If the connection is made properly, unplug the connector between the copier and Finisher and turn OFF and ON the Power Switch. →If the malfunction code display persists, change the copier PWB-A. →If the malfunction is no longer detected, check the connector and, if it is intact, change the Finisher PWB-A.
C13C0	1. Reset the malfunction, turn OFF and ON the Power Switch, and reinstall the I/C. 2. If the malfunction is detected again, check the terminal block for the I/C fuse and HV1 and, if it is intact, change HV1 or PWB-A.
C13D0	1. Reset the malfunction, turn OFF and ON the Power Switch, and unplug the power cord and plug it back in. 2. If the malfunction is detected again, check the connection between IC3 on PWB-A and the EEPROM and, if it is good, change PWB-A. 3. If the malfunction is still detected, change the EEPROM. ✻ For the precautions to be observed when replacing the EEPROM, see DIS/REASSEMBLY, ADJUSTMENT.
C13F0	1. Reset the malfunction and turn OFF and ON the Power Switch. 2. If the same malfunction persists, check the harnesses and PJs between PH Unit and PWB-A and, if they are intact, change PH Unit or PWB-A, in that order.

(7) The Copier Does not Turn ON.

Relevant Electrical Parts	
Power Switch S1 Side Cover Interlock Switch 1 S2 Power Supply Unit 1 PU1 Power Supply Unit 2 PU2	Master Board PWB-A Control Panel UN1 MFB Board UN2

Symptom	Step	Check Item	Result	Action
Power does not turn ON.	1	Is there an AC power supply voltage across PJ1PU1-1 and 3 on PU1 when S1 is turned ON?	NO	Check S1, PU1 fuse, and power supply voltage.
	2	Is the voltage across PJ5PU1-10 and GND DC5V when S1 is turned ON?	YES	Check the fuse on PWB-A.
			NO	Change PU1.
	3	Is the voltage across PJ5PU1-4 and GND DC24V when S1 is turned ON?	NO	Change PU1.
	4	Is the voltage across PJ5PU1-3 and GND DC24V when S1 is turned ON?	NO	Change PU1.
	5	Does the voltage across the S2 connector (yellow) and GND change from DC0V to DC24V when S2 is turned ON?	NO	Check S2.
	6	Is the voltage across PJ7PU1-9 on PU1 and GND DC3.3V?	NO	Change PU1.
	7	Is the voltage across CN1PU2-1 on PU2 and GND DC24V?	NO	Change PU1.
	8	Is the voltage across CN28UN2-8 on UN2 and GND DC-12V?	NO	Change PU2.
	9	Is the voltage across CN28UN2-7 on UN2 and GND DC12V?	YES	Change PWB-A.
			NO	Change PU2.
The control panel indicates nothing.	1	Is DC24V being output from UN2 to UN1? Disconnect CN1UN1 of UN1 and check to see if the voltage across CN1UN1-1 on the harness side and GND is DC24V.	NO	Change UN2.
	2	Is DC5V being output from UN2 to UN1? Disconnect CN1UN1 of UN1 and check to see if the voltage across CN1UN1-28 on the harness side and GND, and across CN1UN1-29 and GND, is DC5V.	YES	Change UN1.
			NO	Change UN2.

5 IMAGE FAILURE

5-1. Image Failure Troubleshooting

Image failures have many possible causes. For troubleshooting, it is necessary to determine whether a failure is attributable to:
1. A basic cause or any other cause
2. The input system (IR) or output system (engine).

In this chapter, troubleshooting is divided into “initial checks” and “troubleshooting procedures classified by image failures.” If an image failure has occurred, first make the initial checks, then proceed to the corresponding image failure troubleshooting procedure.

5-2. Initial Checks

1. Place of installation
- Is the source voltage normal? Does the voltage vary greatly?
- Is the copier installed in a hot, humid place where temperature varies sharply?
- Is the copier installed in a dusty place?
- Is the copier subjected to direct sunlight?
- Is the copier level?

2. Copy paper
- Is the recommended paper used?
- Is the paper damp?
- Does the paper size set in the paper source match the size of the paper loaded in it?

3. Original
- Is the original written in light pencil?
  → Use the test chart to check the image.
- Is the original transparent, or are transparencies being used?
  → Place a blank sheet of paper over the original and make a copy.
- Is the Original Glass dirty or scratched?
  → Clean a dirty glass, or replace a scratched one.

4. Adjust data and Level History data
- Do the values set for “Adjust” and “Level History” fall within the specified range?

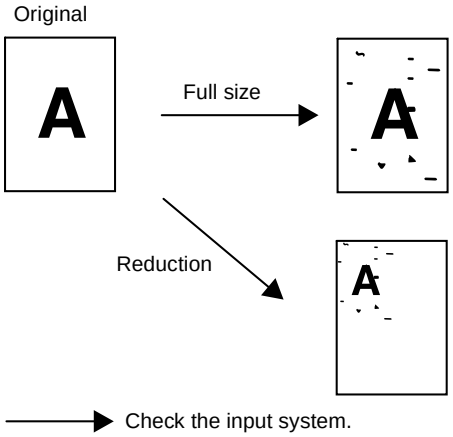
5. PM parts (supplies)
- Have the PM parts (supplies), such as the PC Drum, Cleaning Blade, and other parts that affect image quality, reached the end of their cleaning or replacement cycle?
- Are two or more imaging cartridges being used alternately?

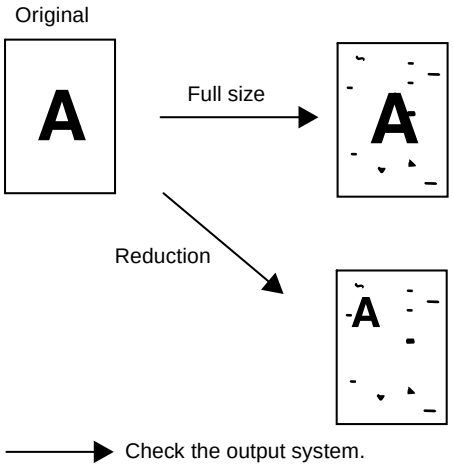
6. Adjustment items (registration, focus, etc.)

- Among the adjustment items given in DIS/REASSEMBLY, ADJUSTMENT, is there any adjustment that may remedy the image failure?

7. Input system (IR) or output system (engine)?

- Run “F12” which can be selected as follows: Tech. Rep. Mode → Function.
- If the test pattern output has the same problem as the copy image:
  → Check the output system.
- If the test pattern output is normal:
  → Check the input system.
- Make a copy at a different zoom ratio.





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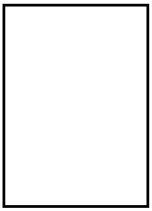
5-3. Troubleshooting Procedures by Image Failure

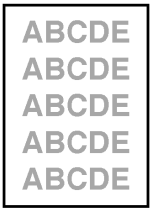
<Image Failure Samples>

1. Blank copy

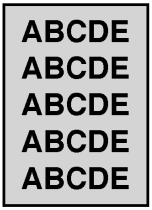


2. Black copy

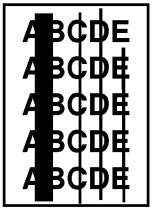
3. Low image density



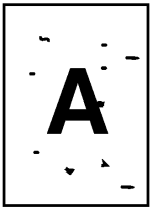
4. Foggy background



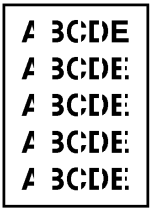
5. Black streaks or bands



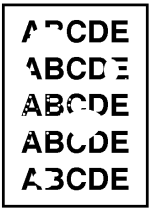
6. Black spots



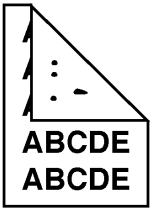
7. Blank streaks or bands



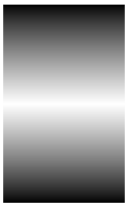
8. Void areas



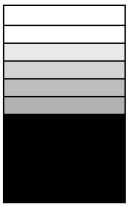
9. Smear on back



10. Uneven image density



11. Gradation reproduction failure



12. Rough image

13. Periodically uneven image

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(1) Blank Copy

Section	Step	Check Item	Result	Action
Engine	1	Is toner empty?	YES	Check Sub Hopper Toner Empty Switch S4 and change the Toner Bottle.
	2	Is the drive transmission mechanism to the Developing Unit in good condition?	NO	Check and change as necessary.
	3	Is the image transfer current terminal intact?	NO	Check and change as necessary.
	4	Does the laser shutter (the one located on the laser beam path between the PH Unit and PC Drum) open and close properly?	NO	Adjust so that the shutter opens and closes properly.
	5	Does the I/C Shutter open and close properly?	YES	Change HV1, PH Unit, or PWB-A, in that order.
			NO	Adjust so that the shutter opens and closes properly.
IR	1	Is the Scanner drive transmission mechanism in good condition?	NO	Check and change as necessary.
	2	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	3	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(2) Black Copy

Section	Step	Check Item	Result	Action
Engine	1	Is the PC Drum charge voltage terminal in good condition?	NO	Check and change as necessary.
	2	Is the grid voltage terminal in good condition?	NO	Check and change as necessary.
	3	Is the developing bias terminal in good condition?	NO	Check and change as necessary.
	4	Does a black copy persist even after the I/C has been replaced with a new one?	YES	Change HV1 or PWB-A.
IR	1	Does the Exposure Lamp turn ON when "ON" is selected for "Lighting Exposure Lamp"? "Lighting Exposure Lamp" can be selected as follows: Tech. Rep. Mode → Movement Check → Scanner.	YES	Perform steps 4 and onward.
			NO	Check connectors and harnesses and perform steps 2 and 3.
	2	Does the voltage across CN13BCR-1 on BCR and GND change from DC24V to DC0V when step 1 is performed again?	NO	Change BCR, HGB, or UN2, in that order.
	3	Is an AC voltage output from INV to Exposure Lamp when step 1 is performed again?	YES	Change LA2.
			NO	Change INV.
	4	Are the mirrors and lens installed properly?	NO	Install them properly.
	5	Are the mirrors and lens dirty?	YES	Clean or change.

(3) Low Image Density

Section	Step	Check Item	Result	Action
Engine	1	Does the image get better when a copy is made with new paper loaded?	YES	Change the paper. Instruct the user on the storage of paper.
	2	Is toner empty?	YES	Check Sub Hopper Toner Empty Switch S4 and change the Toner Bottle.
	3	Is the image transfer current terminal intact?	NO	Check and change as necessary.
	4	Is the developing bias terminal intact?	NO	Check and change as necessary.
	5	Does the image density remain low even after the I/C has been replaced with a new one?	NO	This completes the procedure.
	6	Does the image density become higher when the “Image Density” value is changed toward the plus side? “Image Density” can be selected as follows: Tech. Rep. Mode → Tech. Rep. Choice → Printer.	YES	This completes the procedure.
	7	Does the image density become higher when the “VG Adjust” value is changed toward the plus side? “VG Adjust” can be selected as follows: Tech. Rep. Mode → Tech. Rep. Choice → Printer.	YES	This completes the procedure.
			NO	Change HV1, HGB, or UN2, in that order.
IR	1	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	2	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(4) Foggy Background

Section	Step	Check Item	Result	Action
———	1	Is sunlight or any other extraneous light entering the copier?	YES	Protect the copier from extraneous light.
Engine	1	Is the PC Drum dirty with foreign matter?	YES	Clean the PC Drum.
	2	Is the PC Drum charge voltage terminal in good condition?	NO	Check and change as necessary.
	3	Is the grid voltage terminal in good condition?	NO	Check and change as necessary.
	4	Is the developing bias terminal in good condition?	NO	Check and change as necessary.
	5	Is the Charge Neutralizing Sheet voltage terminal in good condition?	NO	Check and change as necessary.
	6	Is Eraser Lamp LA1 dirty?	YES	Clean.
	7	Does foggy background persist even after the I/C has been replaced with a new one?	NO	This completes the procedure.
	8	Does foggy background persist when the “Image Density” value is changed toward the minus side? “Image Density” can be selected as follows: Tech. Rep. Mode → Tech. Rep. Choice → Printer.	NO	This completes the procedure.
	9	Does foggy background persist when the “VG Adjust” value is changed toward the minus side? “VG Adjust” can be selected as follows: Tech. Rep. Mode → Tech. Rep. Choice → Printer.	YES	Change HV1, PH Unit, or PWB-A, in that order.
			NO	This completes the procedure.
IR	1	Are the mirrors and lens dirty?	YES	Clean or change.
	2	Is the Exposure Lamp dirty or deteriorated?	YES	Clean or change.
	3	Do the connections between the Exposure Lamp and INV remain intact?	NO	Reconnect.
	4	Do the connections from INV to BCR remain intact?	NO	Reconnect.
	5	Do the connections from BCR to HGB remain intact?	NO	Reconnect.
	6	Do the connections from HGB to UN2 remain intact?	YES	Change INV, BCR, HGB, or UN2, in that order.
			NO	Reconnect.

(5) Black Streaks or Bands

Section	Step	Check Item	Result	Action
Engine	1	Is the PC Drum dirty?	YES	Clean the PC Drum.
	2	Has toner spilled from the I/C inside of the copier?	YES	Clean the interior and change I/C.
	3	Is the PC Drum charge voltage terminal in good condition?	NO	Check and change as necessary.
	4	Is the grid voltage terminal in good condition?	NO	Check and change as necessary.
	5	Are the Fusing Rollers dirty with foreign matter?	YES	Clean or change the Fusing Rollers.
			NO	Change I/C.
IR	1	Are the mirrors, lens, and Original Glass dirty with foreign matter?	YES	Clean the mirrors, lens, and Original Glass.
	2	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	3	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(6) Black Spots

Section	Step	Check Item	Result	Action
Engine	1	Is the PC Drum dirty?	YES	Clean the PC Drum.
	2	Has toner spilled from the I/C inside of the copier?	YES	Clean the interior and change I/C.
	3	Is the PC Drum charge voltage terminal in good condition?	NO	Check and change as necessary.
	4	Is the grid voltage terminal in good condition?	NO	Check and change as necessary.
	5	Are the Fusing Rollers dirty with foreign matter?	YES	Clean or change the Fusing Rollers.
			NO	Change I/C.
IR	1	Are the mirrors, lens, and Original Glass dirty with foreign matter?	YES	Clean the mirrors, lens, and Original Glass.
	2	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	3	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(7) Blank Streaks or Bands

Section	Step	Check Item	Result	Action
Engine	1	Is the PC Drum dirty with foreign matter?	YES	Clean the PC Drum.
	2	Is the image transfer current terminal intact?	YES	Check and change as necessary.
	3	Is the Image Transfer Roller dented or scratched?	YES	Change the Image Transfer Roller.
	4	Are the Fusing Rollers scratched or dirty?	YES	Clean or change the Fusing Rollers.
	5	Is the PH Unit window glass dirty?	YES	Clean the window glass.
	6	Is the light path between PH and PC dirty with dust?	YES	Remove dust.
			NO	Change the I/C.
IR	1	Is the Shading Sheet on the Original Glass dirty?	YES	Clean or change.
	2	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	3	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(8) Void Areas

Section	Step	Check Item	Result	Action
Engine	1	Does the image get better when a copy is made with new paper loaded?	YES	Change the paper. Instruct the user on the storage of paper.
	2	Is the Image Transfer Roller installed correctly?	NO	Install correctly.
	3	Is the Image Transfer Roller dented or scratched?	YES	Change the Image Transfer Roller.
	4	Is the image transfer current terminal intact?	NO	Check and change as necessary.
	5	Are the Fusing Rollers scratched or deformed?	YES	Change the Fusing Rollers.
			NO	Change the I/C.
IR	1	Is the Original Glass dirty?	YES	Clean or change.
	2	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	3	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(9) Smear on Back

Section	Step	Check Item	Result	Action
Engine	1	Is the Image Transfer Roller dirty?	YES	Clean or change.
	2	Has toner spilled from the I/C inside of the copier?	YES	Clean the interior and change I/C.
	3	Are the Fusing Rollers dirty?	YES	Clean or change the Fusing Rollers.

(10) Uneven Image Density

Section	Step	Check Item	Result	Action
Engine	1	Is the Image Transfer Roller dirty or deteriorated?	YES	Clean or change the Image Transfer Roller.
	2	Does the image get better when a copy is made with new paper loaded?	YES	Change the paper. Instruct the user on the storage of paper.
			NO	Change the I/C or PWB-A.
IR	1	Are the Original Glass, mirrors, and lens dirty with foreign matter?	YES	Clean the Original Glass, mirrors, and lens.
	2	Is the Shading Sheet on the Original Glass dirty?	YES	Clean or change.
	3	Is the Exposure Lamp dirty or deteriorated?	YES	Clean or change.
	4	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	5	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(11) Gradation Reproduction Failure

Section	Step	Check Item	Result	Action
Engine	1	Does the image get better when a copy is made with new paper loaded?	YES	Change the paper. Instruct the user on the storage of paper.
			NO	Change PWB-A.
IR	1	Is the Shading Sheet dirty?	YES	Clean or change.
	2	Is the Original Glass dirty?	YES	Clean or change.
	3	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	4	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(12) Rough Image

Section	Step	Check Item	Result	Action
Engine	1	Is the Image Transfer Roller dirty?	YES	Clean or change.
	2	Is the image transfer current terminal intact?	YES	Change HV1, I/C, PH Unit, or PWB-A, in that order.
			NO	Check and change as necessary.
IR	1	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	2	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(13) Periodically Uneven Image

Section	Step	Check Item	Result	Action
Engine	1	Is the Developing Unit drive gear cracked or dirty with foreign matter?	YES	Clean or change.
	2	Is the PC Drum drive gear cracked or dirty with foreign matter?	YES	Clean or change.
	3	Is the Synchronizing Roller drive gear cracked or dirty with foreign matter?	YES	Clean or change.
	4	Is the Fusing Unit drive gear cracked or dirty with foreign matter?	YES	Clean or change.
	5	Is the PH Assy secured properly?	YES	Change the I/C or PWB-A.
			NO	Secure properly.
IR	1	Is the Scanner Motor drive gear cracked or dirty with foreign matter?	YES	Clean or change.
	2	Is the Scanner Motor secured properly?	NO	Secure properly.
	3	Is the Scanner secured properly?	NO	Secure properly.
	4	Are the Scanner Drive Cables wound properly?	NO	Wind the cables properly.
	5	Are the Scanner rails damaged or dirty with foreign matter?	YES	Clean or change.
	6	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	7	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

Di350

SERVICE MANUAL

[GENERAL]

Safety Precautions for Inspection and Service

When performing inspection and service procedures, observe the following precautions to prevent accidents and ensure utmost safety.

✻ Depending on the model, some of the precautions given in the following do not apply.

Different markings are used to denote specific meanings as detailed below.

WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

The following graphic symbols are used to give instructions that need to be observed.

Used to call the service technician's attention to what is graphically represented inside the marking (including a warning).

Used to prohibit the service technician's from doing what is graphically represented inside the marking.

Used to instruct the service technician's to do what is graphically represented inside the marking.

WARNING

1. Always observe precautions.

- Parts requiring special attention in this product will include a label containing the mark shown on the left plus precautionary notes. Be sure to observe the precautions.
- Be sure to observe the "Safety Information" given in the Operator's Manual.

2. Before starting the procedures, be sure to unplug the power cord.

- This product contains a high-voltage unit and a circuit with a large current capacity that may cause an electric shock or burn.
- The product also contains parts that can jerk suddenly and cause injury.
- If this product uses a laser, laser beam leakage may cause eye damage or blindness.

3. Use the specified parts.

- For replacement parts, always use the genuine parts specified in the manufacturer's parts manual. Installing a wrong or unauthorized part could cause dielectric breakdown, overload, or undermine safety devices resulting in possible electric shock or fire.
- Replace a blown electrical fuse or thermal fuse with its corresponding genuine part specified in the manufacturer's parts manual. Installing a fuse of a different make or rating could lead to a possible fire. If a thermal fuse blows frequently, the temperature control system may have a problem and action must be taken to eliminate the cause of the problem.

4. Handle the power cord with care and never use a multiple outlet.

- Do not break, crush or otherwise damage the power cord. Placing a heavy object on the power cord, or pulling or bending it may damage it, resulting in a possible fire or electric shock.
- Do not use a multiple outlet to which any other appliance or machine is connected.
- Be sure the power outlet meets or exceeds the specified capacity.

5. Be careful with the high-voltage parts.

- A part marked with the symbol shown on the left carries a high voltage. Touching it could result in an electric shock or burn. Be sure to unplug the power cord before servicing this part or the parts near it.

6. Do not work with wet hands.

- Do not unplug or plug in the power cord, or perform any kind of service or inspection with wet hands. Doing so could result in an electric shock.

7. Do not touch a high-temperature part.

- A part marked with the symbol shown on the left and other parts such as the exposure lamp and fusing roller can be very hot while the machine is energized. Touching them may result in a burn.
- Wait until these parts have cooled down before replacing them or any surrounding parts.

8. Maintain a grounded connection at all times. (This item may not apply in the USA.)

- Be sure to connect the ground wire to the ground terminal even when performing an inspection or repair. Without proper grounding, electrical leakage could result in an electric shock or fire.
- Never connect the ground wire to a gas pipe, water pipe, telephone ground wire, or a lightning conductor.

9. Do not remodel the product.

- Modifying this product in a manner not authorized by the manufacturer may result in a fire or electric shock. If this product uses a laser, laser beam leakage may cause eye damage or blindness.

10. Restore all parts and harnesses to their original positions.

- To promote safety and prevent product damage, make sure the harnesses are returned to their original positions and properly secured in their clamps and saddles in order to avoid hot parts, high-voltage parts, sharp edges, or being crushed.
- To promote safety, make sure that all tubing and other insulating materials are returned to their original positions. Make sure that floating components mounted on the circuit boards are at their correct distance and position off the boards.

CAUTION

1. Precautions for Service Jobs

- A toothed washer and spring washer, if used originally, must be reinstalled. Omitting them may result in contact failure which could cause an electric shock or fire.
- When reassembling parts, make sure that the correct screws (size, type) are used in the correct places. Using the wrong screw could lead to stripped threads, poorly secured parts, poor insulating or grounding, and result in a malfunction, electric shock or injury.
- Take great care to avoid personal injury from possible burrs and sharp edges on the parts, frames and chassis of the product.
- When moving the product or removing an option, use care not to injure your back or allow your hands to be caught in mechanisms.

2. Precautions for Servicing with Covers and Parts Removed

- Wherever feasible, keep all parts and covers mounted when energizing the product.
- If energizing the product with a cover removed is absolutely unavoidable, do not touch any exposed live parts and use care not to allow your clothing to be caught in the moving parts. Never leave a product in this condition unattended.
- Never place disassembled parts or a container of liquid on the product. Parts falling into, or the liquid spilling inside, the mechanism could result in an electric shock or fire.
- Never use a flammable spray near the product. This could result in a fire.
- Make sure the power cord is unplugged before removing or installing circuit boards or plugging in or unplugging connectors.
- Always use the interlock switch actuating jig to actuate an interlock switch when a cover is opened or removed. The use of folded paper or some other object may damage the interlock switch mechanism, possibly resulting in an electric shock, injury or blindness.

3. Precautions for the Working Environment

- The product must be placed on a flat, level surface that is stable and secure.
- Never place this product or its parts on an unsteady or tilting workbench when servicing.
- Provide good ventilation at regular intervals if a service job must be done in a confined space for a long period of time.
- Avoid dusty locations and places exposed to oil or steam.
- Avoid working positions that may block the ventilation ports of the product.

4. Precautions for Handling Batteries

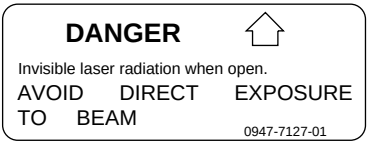
- Replace a rundown battery with the same type as specified in the manufacturer's parts manual.
- Before installing a new battery, make sure of the correct polarity of the installation or the battery could burst.
- Dispose of used batteries according to the local regulations. Never dispose of them at the user's premises or attempt to try to discharge one.

5. Precautions for the Laser Beam (Only for Products Employing a Laser)

- Removing the cover marked with the following caution label could lead to possible exposure to the laser beam, resulting in eye damage or blindness. Be sure to unplug the power cord before removing this cover.
- If removing this cover while the power is ON is unavoidable, be sure to wear protective laser goggles that meet specifications.
- Make sure that no one enters the room when the machine is in this condition.
- When handling the laser unit, observe the “Precautions for Handling Laser Equipment.”

注意– ここを開くと不可視レーザ光が出ます。ビームを直接見たり、触れたりしないでください。
CAUTION- INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
VORSICHT- UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN
ADVARSEL- USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN
VARO! AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE ÄLÄ KATSO SÄTEESEEN
ADVARSEL- USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING
VARNING- OSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÄR ÖPPNAD STRÅLEN ÄR FARLIG
注意： 当您打开这里时，会出现肉眼看不见的激光射线，请不要直视或接触光线。

1167P001AA



1144D270AA

Other Precautions

- To reassemble the product, reverse the order of disassembly unless otherwise specified.
- While the product is energized, do not unplug or plug connectors into the circuit boards or harnesses.
- The magnet roller generates a strong magnetic field. Do not bring it near a watch, floppy disk, magnetic card, or CRT tube.
- An air gun and vacuum cleaner generates a strong electrostatic charge that can destroy the ATDC sensor and other sensors. Before cleaning a component with one of these devices, be sure to remove all the sensors. Otherwise, use a blower brush and cloth when cleaning parts.
- When handling circuit boards with MOS ICs, observe the “INSTRUCTIONS FOR HANDLING THE PWBs WITH MOS ICs” (applicable only to the products using MOS ICs).
- The PC Drum is a very delicate component. Observe the precautions given in “HANDLING OF THE PC DRUM” because mishandling may result in serious image problems.
- Note that replacement of a circuit board may call for readjustments or resetting of particular items, or software installation.
- After completing a service job, perform a safety check. Make sure that all parts, wiring and screws are returned to their original positions.
- Check the area surrounding the service site for any signs of damage, wear or need of repair.
- Do not pull out the toner hopper while the toner bottle is turning. This could result in a damaged hopper motor or locking mechanism.
- If the product is to be run with the front door open, make sure that the toner hopper is in the locked position.

Used Batteries Precautions

ALL Areas

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

Germany

VORSICHT!

Explosionsgefahr bei unsachgemäßem Austausch der Batterie.
Ersatz nur durch denselben oder einen vom Hersteller empfohlenen ähnlichen Typ.
Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

France

ATTENTION

Ily a danger d'explosion s'ily a remplacement incorrec de la batterie.
Remplacer uniquement avec une batterie du meme type ou d'un type équivalent recommande par le constructueur.
Mettre au rebut les batteries usageés conformément aux instructions du fabricant.

Denmark

ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

Norway

ADVARSEL

Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

Sweden

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

Finland

VAROITUS

Paristo voi räjähtää, los se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä Käytetty paristo valmistajan ohjeiden mukaisesti.

Di350

GENERAL

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2. SPECIFICATIONS G-8
3. PRECAUTIONS FOR INSTALLATION G-10
4. PRECAUTIONS FOR USE G-11
5. HANDLING OF THE CONSUMABLES G-12
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1171SBG0100A

1 SAFETY INFORMATION

Laser Safety

This is a digital machine which prints by means of a laser. There is no possibility of danger from the laser, provided the machine is operated according to the instructions in this manual.

Since radiation emitted by the laser is completely confined within protective housing, the laser beam cannot escape from the machine during any phase of user operation.

This machine is certified as a Class 1 product. This means the machine does not produce hazardous laser radiation.

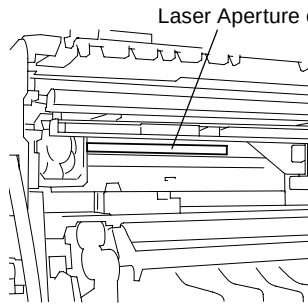
CAUTION: The use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure. Because of this, Minolta strongly recommends that you operate your copy machine only as described in this documentation.

Internal Laser Radiation

Maximum Average Radiation Power: 36.7μW at laser aperture of the print head unit

Wavelength: 770-810nm

This product employs a Class IIIb Laser Diode that emits an invisible laser beam.
The Laser Diode and Scanning Polygon Mirror are incorporated in the print head unit.
The print head unit is NOT A FIELD SERVICE ITEM.
Therefore, the print head unit should not be opened under any circumstances.



This figure shows the view inside the Right Side Door with the Imaging Unit removed.

For United States

CDRH regulation

This copier is certified as a Class 1 Laser product under the Radiation Performance Standard according to the Food, Drug and Cosmetic Act of 1990. Compliance is mandatory for Laser products marketed in the United States and is reported to the Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration of the U.S. Department of Health and Human Services (DHHS). This means that the device does not produce hazardous laser radiation.

The label shown on page G-3 indicates compliance with the CDRH regulations and must be attached to laser products marketed in the United States.

CAUTION: Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

This is a semiconductor laser. The maximum power of the laser diode is 5mW and the wavelength is 770-810nm.

For Europe

CAUTION: Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

This is a semiconductor laser. The maximum power of the laser diode is 5mW and the wavelength is 770-810nm.

For Denmark

ADVARSEL
Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion.
Undgå udsættelse for stråling.

Klasse 1 laser produkt der opfylder IEC60825 sikkerheds kravene.

For Finland

LUOKAN 1 LASERLAITE

VAROITUS
Laitteen käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARO
Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättomälle lasersäteilylle. Älä katso säteeseen.

For Sweden

KLASS 1 LASER APPARAT

VARNING
Om apparaten används på annat sätt än i denna bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

VARNING
Osynlig laserstråining när denna del är öppnad och spärren är urkopplad. Betrakta ej stråien.

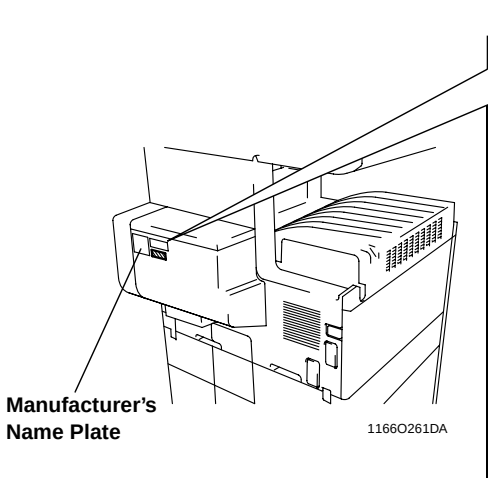
For Norway

ADVERSEL
Dersom apparatet brukes på annen måte enn spesifisert i denne bruksanvisning, kan brukeren utsettes för unsynlig laserstrålning, som overskrider grensen for laser klass 1.

Dette en halveder laser. Maksimal effekt till laserdiode er 5mW og bϕlgelengde er 770-810nm.

Laser Safety Label

A laser safety label is attached to the outside of the copy machine as shown below.



The Manufacturer's Name Plate is affixed at the position illustrated above.
Please write down the Model Name and Serial No. of your copier here.

Model:
Serial No.:

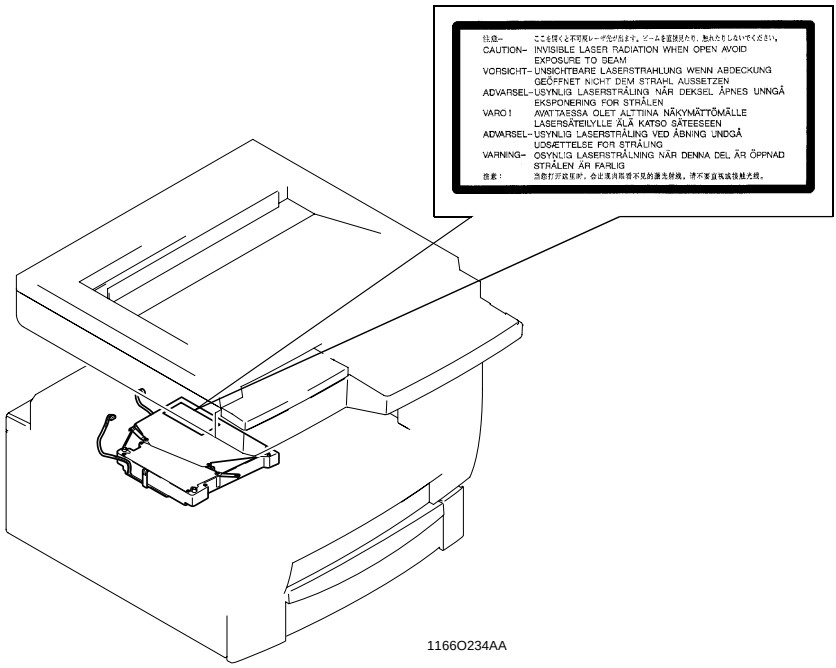
Label inside copy machine

The following laser safety label will be attached inside the copy machine as shown below.

Please read the following for your own protection.

⚠ Caution

Opening the cover indicated by the Caution label may expose you to harmful laser radiation which could cause damage or loss of eyesight. Do not open the cover when the power is on.


注意–
CAUTION– INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
VORSICHT– UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN
ADVARSEL– USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN
VARO ! AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE ÄLÄ KATSO SÄTEESEEN
ADVARSEL– USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING
VARNING– OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD STRÅLEN ÄR FARLIG
注意 :
1166O234AA

ALL Areas

CAUTION
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type
recommended by the manufacturer.
Dispose of used batteries according
to the manufacturer's instructions.

Germany only

VORSICHT!
Explosinsgefahr bei unsachgemäßen austausch der
batterie. Ersatz nur durch denselben oder einen vom hersteller
empfohlenen ähnlichen typ. Entsorgung gebrauchter batterien
nach angaben des herstellers.

Denmark only

ADVARSEL!
Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

Norway only

ADVARSEL
Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende
type anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens
instruksjoner.

Sweden only

VARNING
Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens
instruktion.

Finland only

VAROITUS
Paristo voi räjähtää, los se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppiin. Hävitä Käytetty paristo valmistajan ohjeiden
mukaisesti.

ALL Areas

CAUTION

"Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used IC Package according to the manufacturer's instructions."

Germany only

VORSICHT!

⇒"Austausch nur durch denselben oder einen vom Hersteller empfohlenen, gleichwertigen typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

Service Precautions

(1) Precautions

Refer to DISASSEMBLY/CLEANING for the Disassembly procedure.

1. When unplugging connectors on the P.W.B.s themselves, always make sure the power is OFF first. Be sure to unplug the copier before disassembling and cleaning.
2. Always unplug connectors by holding the connector housing. Pulling on the wires can lead to problems with poor contact.
3. It is recommended that a body ground not be used when carrying out any troubleshooting procedure. Be sure to ground DC lines to a ground test point on the P.W.B.

(2) At Replacement/Adjustment/Cleaning

1. Be sure to handle the Fusing Unit carefully. It remains hot a while after the copier is turned off.
2. Do not disassemble the Imaging Cartridge or Print Head Unit.
3. Do not expose the PC Drum of the Imaging Cartridge to direct sunlight or to room lighting for more than 5 minutes.
4. Turn off the power before removing the Print Head Unit to protect the eyes from possible exposure to the laser beam.
5. Use only a Fuse of the indicated rating.

(3) During Operation

1. Keep your hands, clothing, etc. well away from operating or rotating parts.
2. Never touch the terminals of electrical parts or high voltage parts.
3. This copier uses an invisible laser beam. To prevent a laser beam leak, the copier performs a trial run to make sure the covers are in position.

Handling the P.W.B.

Observe the following precautions when handling a P.W.B. with ICs.

(1) During Transportation/Storage

1. During transport and storage, P.W.B.s should be kept in conductive bags or on mats and not taken out unless absolutely necessary.
2. P.W.B.s should be stored in a place where direct sunlight does not strike them.
3. Do not touch IC terminals with your hands.

(2) At Replacement

1. Before removing connectors from a P.W.B., make sure the copier has been unplugged.
2. When P.W.B.s are taken out of their conductive bags or off their mats, hold them by their edges to avoid touching the terminals or the patterned surfaces.
3. Before installing connectors on a P.W.B., make sure the copier has been unplugged.

1171SBG0200A

2 SPECIFICATIONS

TYPE	:	Console/Desktop Type
PHOTOCONDUCTOR	:	Organic Photoconductor
COPYING SYSTEM	:	Electrostatic Dry Powdered Image Transfer to Plain Paper with a Laser
ORIGINAL SCANNING RESOLUTION	:	600 dpi
PAPER FEEDING SYSTEM	:	3-way system - Manual Feed Tray: Single sheet feeding - Multi-Purpose (MP) Cassette: Plain paper: Approx. 250 sheets Special paper: Approx. 20 sheets - 500-Sheet Cassette: Approx. 500 sheets
EXPOSURE SYSTEM	:	Mirror Scanning, Slit Exposure
DEVELOPING SYSTEM	:	MT-HG System
CHARGING SYSTEM	:	Comb Electrode (1) DC Negative Corona with Scorotron System
IMAGE TRANSFER	:	Roller Image Transfer
PAPER SEPARATING SYSTEM	:	Paper Separator Fingers and Charge Neutralizing Plate
FUSING SYSTEM	:	Heat Roller
PAPER DISCHARGING SYSTEM	:	Charge Neutralizing Brush
MAXIMUM ORIGINAL SIZE	:	A3L, 11" × 17"L

COPY MEDIUM

Paper Source		MP Cassette	Manual Feed Tray
Medium	Plain paper (60 to 90 g/m^2)	❍	❍
	Transparencies	❍	❍
	Thick paper (91 to 157 g/m^2)	❍	❍
	Postcards (190 g/m^2)	❍	❍
	Recycled paper	❍	❍
Dimensions	Maximum (Width × Length)	297 × 432 mm	297 × 432 mm
	Minimum (Width × Length)	90 × 140 mm	90 × 140 mm

m: Permissible –: Not permissible

MULTIPLE COPIES	:	1 to 999
WARMING-UP TIME	:	70 sec. or less with room temperature of 23°C and rated power voltage
FIRST COPY TIME	:	4.7 sec. (A4C, MP Cassette, full size mode) 4.7 sec. (8-1/2" × 11"C, MP Cassette, full size mode)

CONTINUOUS COPY SPEED (copies/min.)

- Metric -

Size	Speed
A3L	20
B4L	23
A4L	27
A4C	35
B5L	30
B5C	40

- Inch -

Size	Speed
11" × 17"L	20
8-1/2" × 14"L	23
8-1/2" × 11"L	28
8-1/2" × 11"C	35

ZOOM RATIOS

		- Metric -	- Inch -
Fixed	Full Size	× 1.000	× 1.000
	Enlargement	× 2.000 × 1.414 × 1.224 × 1.154	× 2.000 × 1.545 × 1.294 × 1.214
	Reduction	× 0.866 × 0.816 × 0.707 × 0.500	× 0.785 × 0.733 × 0.647 × 0.500
Variable	25% to 400% (in 0.1% increments)		

LENS : Through Lens (F = 4.0, f = 62 mm)
EXPOSURE LAMP : Fluorescent Lamp
FUSING TEMPERATURE : 190°C

POWER/CURRENT CONSUMPTION (Copier Only)

Exposure Lamp (Rating)	Fusing Roller Heater Lamp (Rating)	Max. Power Consumption (full system)	Max. Current Consumption (full system)
24V 20W	775W	1050W	120V, 10A 230V, 5A

POWER REQUIREMENTS : 120V, 230V, 50/60Hz

ENVIRONMENTAL CONDITIONS

Temperature	10 to 32°C with a fluctuation of 10°C or less per hour
Humidity	15 to 85% RH with a fluctuation of 10% RH or less per hour
Ambient Illumination	3,000 lux or less
Levelness	1° (1.75 mm/100 mm)

DIMENSIONS : Width ... 616 mm, 24-1/4"
Depth ... 707 mm, 27-3/4"
Height ... 635 mm, 25"
WEIGHT : 55.5 kg, 122-1/4 lbs.

1171SBG0300A

3 PRECAUTIONS FOR INSTALLATION

Installation Site

To ensure safety and utmost performance of the copier, the copier should NOT be used in a place:

- Where it will be subjected to extremely high or low temperature or humidity.
- Which is exposed to direct sunlight.
- Which is in the direct air stream of an air conditioner, heater or ventilator.
- Which puts the operator in the direct stream of exhaust from the copier.
- Which has poor ventilation.
- Where ammonia gas might be generated.
- Which does not have a stable, level floor.
- Where it will be subjected to sudden fluctuations in either temperature or humidity. If a cold room is quickly heated, condensation forms inside the copier, resulting in blank spots in the copy.
- Which is near any kind of heating device.
- Where it may be splashed with water.
- Which is dirty or where it will receive undue vibration.
- Which is near volatile flammables or curtains.

Power Source

Use an outlet with a capacity of 120V/10A, or 220V to 240V/5A or more.

- If any other electrical equipment is sourced from the same power outlet, make sure that the capacity of the outlet is not exceeded.
- Use a power source with little voltage fluctuation.
- Never connect by means of a multiple socket any other appliances or machines to the outlet being used for the copier.
- Make the following checks at frequent intervals:
  ✻Is the power plug abnormally hot?
  ✻Are there any cracks or scrapes in the cord?
  ✻Has the power plug been inserted fully into the outlet?
  ✻Does something, including the copier itself, ride on the power cord?
- Ensure that the copier does not ride on the power cord or communications cable of other electrical equipment, and that it does not become wedged into or underneath the mechanism.

Grounding

To prevent receiving electrical shocks in the case of electrical leakage, always ground the copier.

- Connect the ground wire to:
  ✻The ground terminal of the outlet.
  ✻A grounding contact which complies with the local electrical standards.
- Never connect the ground wire to a gas pipe, the ground wire for a telephone, or a water pipe.

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4 PRECAUTIONS FOR USE

To ensure that the copier is used in an optimum condition, observe the following precautions.

- Never place a heavy object on the copier or subject the copier to shocks.
- Insert the power plug all the way into the outlet.
- Do not attempt to remove any panel or cover which is secured while the copier is making copies.
- Do not turn OFF the Power Switch while the copier is making copies.
- Provide good ventilation when making a large number of copies continuously.
- Never use flammable sprays near the copier.
- If the copier becomes inordinately hot or produces abnormal noise, turn it OFF and unplug it.
- Do not turn ON the Power Switch at the same time when you plug the power cord into the outlet.
- When unplugging the power cord, do not pull on the cord; hold the plug and pull it out.
- Do not bring any magnetized object near the copier.
- Do not place a vase or vessel containing water on the copier.
- Be sure to turn OFF the Power Switch at the end of the workday or upon power failure.
- Use care not to drop paper clips, staples, or other small pieces of metal into the copier.

Operating Environment

The operating environmental requirements of the copier are as follows:

- Temperature: 10°C to 32°C with a fluctuation of 10°C per hour
- Humidity: 15% to 85% RH with a fluctuation of 10% RH per hour

Power Requirements

The power source voltage requirements are as follows:

- Voltage Fluctuation: AC120/230V
  ±10% (Copying performance assured)
  +10% -15% (Paper feeding performance assured)
- Frequency Fluctuation: 50/60 Hz ±0.3%

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5 HANDLING OF THE CONSUMABLES

Before using any consumable, always read the label on the container carefully.

- Use the right toner. The applicable copier model name is indicated on the toner bottle.
- Paper is easily damaged by dampness. To prevent absorption of moisture, store paper, which has been removed from its wrapper but not loaded into the drawer, in a sealed plastic bag in a cool, dark place.
- Keep consumables out of the reach of children.
- Do not touch the PC Drum with bare hands.
- Store the paper, toner, and other consumables in a place free from direct sunlight and away from any heating apparatus.
- The same sized paper is of two kinds, short grain and long grain. Short grain paper should only be fed through the copier crosswise, long grain paper should only be fed lengthwise.
- If your hands become soiled with toner, wash them with soap and water immediately.
- Do not throw away any used consumables (PC Drum, starter, toner, etc.). They are to be collected.

NOTE

Do not burn, bury in the ground, or throw into the water any consumables (PC Drum, starter, toner, etc.).

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6 OTHER PRECAUTIONS

The Print Head Unit of this copier uses a laser diode that emits a laser beam. Use the following precautions when performing service jobs at the users' premises.

- When a service job needs to be performed in the laser beam path, such as when working around the Print Head Unit and PC Drum, be sure first to turn the copier OFF.
- If the job requires that the power cord be left plugged in, observe the following precautions

1. Take off your watch, ring, and any other reflective object and wear laser protective goggles.
2. At the job site, select a place that is as far as possible away from the users and that is enclosed by walls.
3. Do not bring a highly reflective tool into the laser beam path during the service job.

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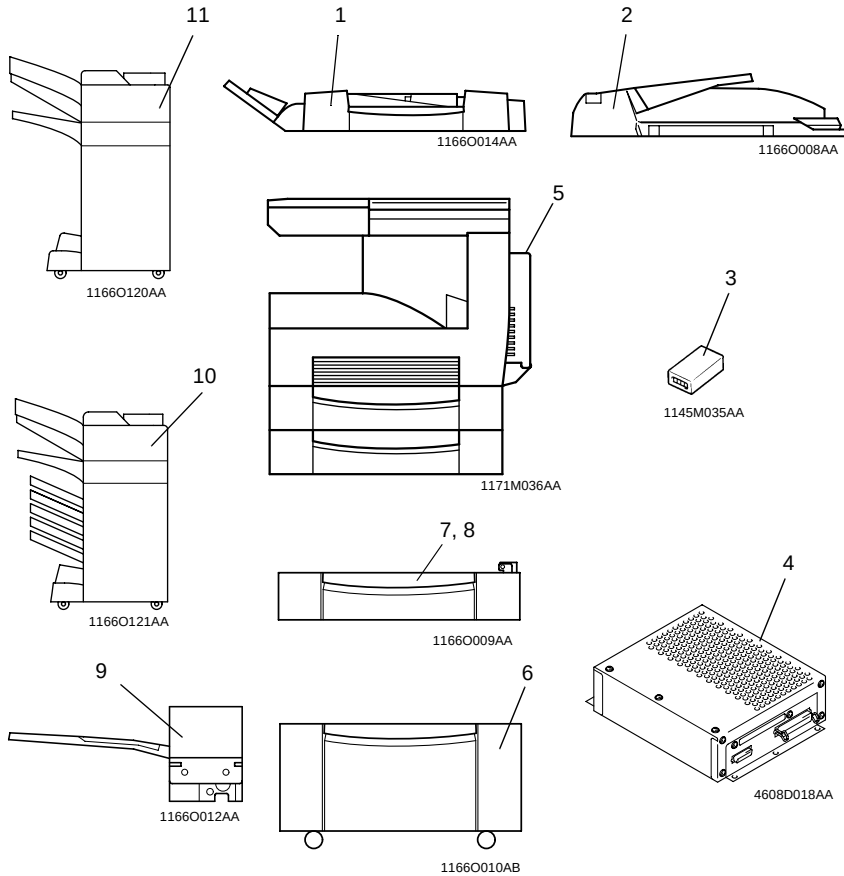
7 SYSTEM OPTIONS



1. Duplexing Document Feeder (AFR-14)
2. Automatic Document Feeder (AF-7)
3. Plug-In Counter
4. Printer Controller (Pi3500)
5. Duplex Unit (AD-10) ✻
6. Large Capacity Cabinet (PF-106)
7. Paper Feed Unit (PF-108)
8. Paper Feed Unit (PF-110)
9. Job Tray (JS-200)
10. Mailbin Finisher (FN-500)
11. Finisher (FN-100)

✻ See the option service manual for the details of AD-10.

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MECHANICAL/ ELECTRICAL

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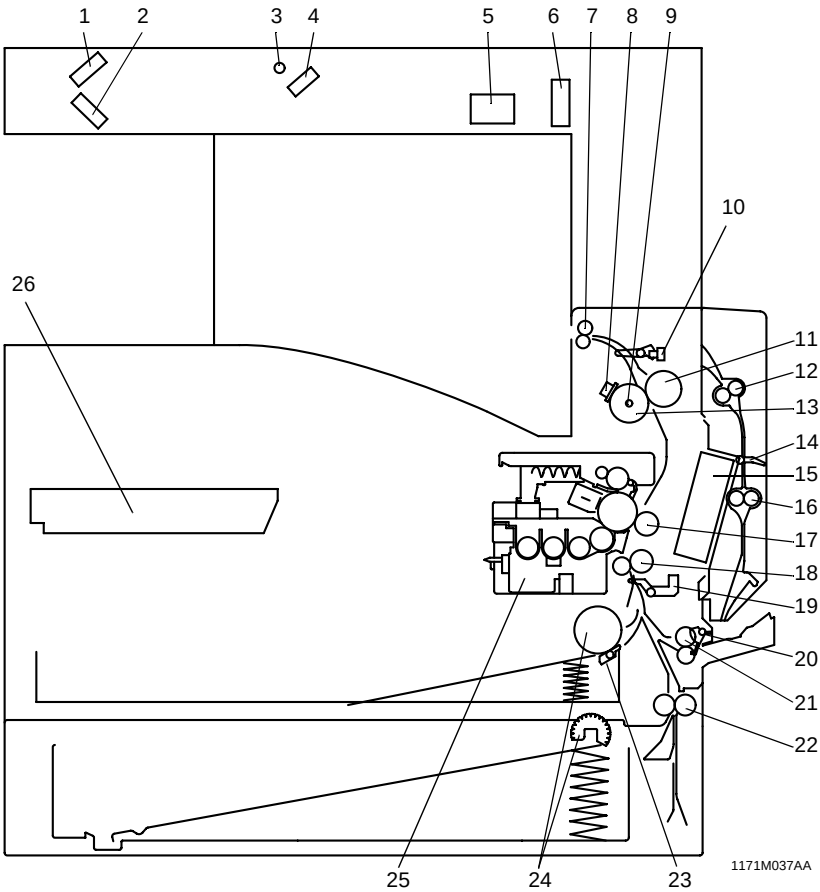
1 CROSS-SECTIONAL VIEW



1. 2nd Mirror
2. 3rd Mirror
3. Exposure Lamp
4. 1st Mirror
5. Lens
6. CCD Unit
7. Paper Exit Roller
8. Fusing Roller Thermostat (TS1)
9. Fusing Roller Heater Lamp (H1)
10. Paper Exit Sensor (PC3)
11. Right Fusing Roller
12. Duplex Unit Transport Roller 1
13. Left Fusing Roller
14. Duplex Unit Transport Sensor (PI1)
15. Fusing Cooling Fan Motor (M3)
16. Duplex Unit Transport Roller 2
17. Image Transfer Roller
18. Synchronizing Roller
19. Synchronizing Roller Sensor (PC2)
20. Manual Feed Paper Take-Up Sensor (PC8)
21. Manual Feed Paper Take-Up Roll
22. Vertical Transport Roller
23. Paper Separator Pad
24. Paper Take-Up Roll
25. Imaging Cartridge (I/C)
26. PH Unit

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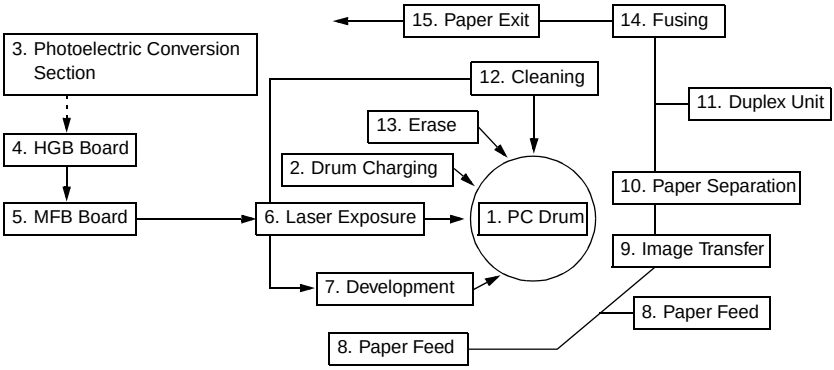
2 COPYING PROCESS



1. PC Drum
- The drum is an aluminum cylinder coated with photosensitive material on which an electrostatic latent image is produced.

2. Drum Charging
- A scorotron charger employing a comb electrode generates a negative DC charged layer on the surface of the PC Drum.

3. Photoelectric Conversion Section
- The Exposure Lamp directs light onto the original. The light reflected off the original is directed and resized by the mirrors and lens so as to produce a reduced-size image on the CCD Sensor.

4. HGB Board
- Converts an electric signal into a corresponding 8-bit digital image signal (A/D conversion), makes various corrections, and outputs the results to the MFB Board.

5. MFB Board
- Compresses the image data received from the HGB Board, stores it, and uncompresses it.

6. Laser Exposure
- The laser beam emitted from the LD (laser diode) strikes the surface of the PC Drum, creating an electrostatic latent image.

7. Development
- Negatively charged toner adheres to the latent image on the PC Drum surface, creating a visible image.

8. Paper Feed
- Feeds sheets of paper from the appropriate paper source.

9. Image Transfer
- An Image Transfer Roller is used. A positive charge applied to the roller causes the visible image on the surface of the PC Drum to transfer onto the front side of the paper.

10. Paper Separation
- The PC Drum Separator Fingers remove paper from the surface of the PC Drum.

11. Duplex Unit
- Makes 2-sided copies.

12. Cleaning
- The Cleaning Blade scrapes residual toner off the surface of the PC Drum and the toner is recycled back to the Developing Unit.

13. Erase
- The PC Drum is exposed to light, which effectively removes any residual charge from the drum surface.

14. Fusing
- Heat and pressure applied by the Right and Left Fusing Rollers fuse toner on the paper.

15. Paper Exit
- Feeds paper out of the copier.

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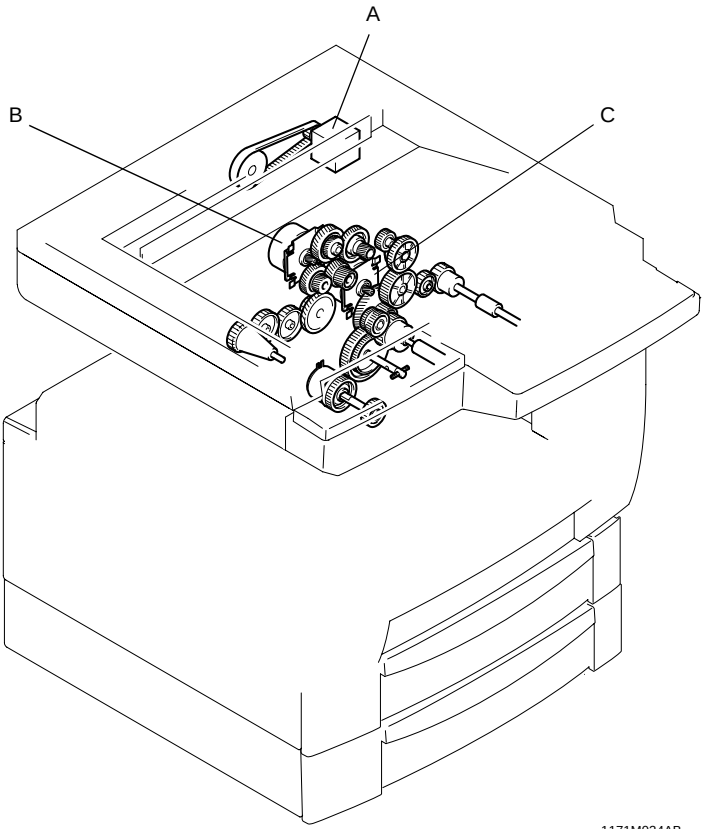
3 DRIVE SYSTEM



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A. Scanner Motor (M5)
Drives the Scanner and 2nd/3rd Mirrors Carriage.
B. I/C Motor (M1)
Drives the I/C Unit.
C. Main Motor (M2)
Drives the Paper Take-Up Roll, Manual Feed Paper Take-Up Roll, Synchronizing Roller, Image Transfer Roller, and Fusing Unit.

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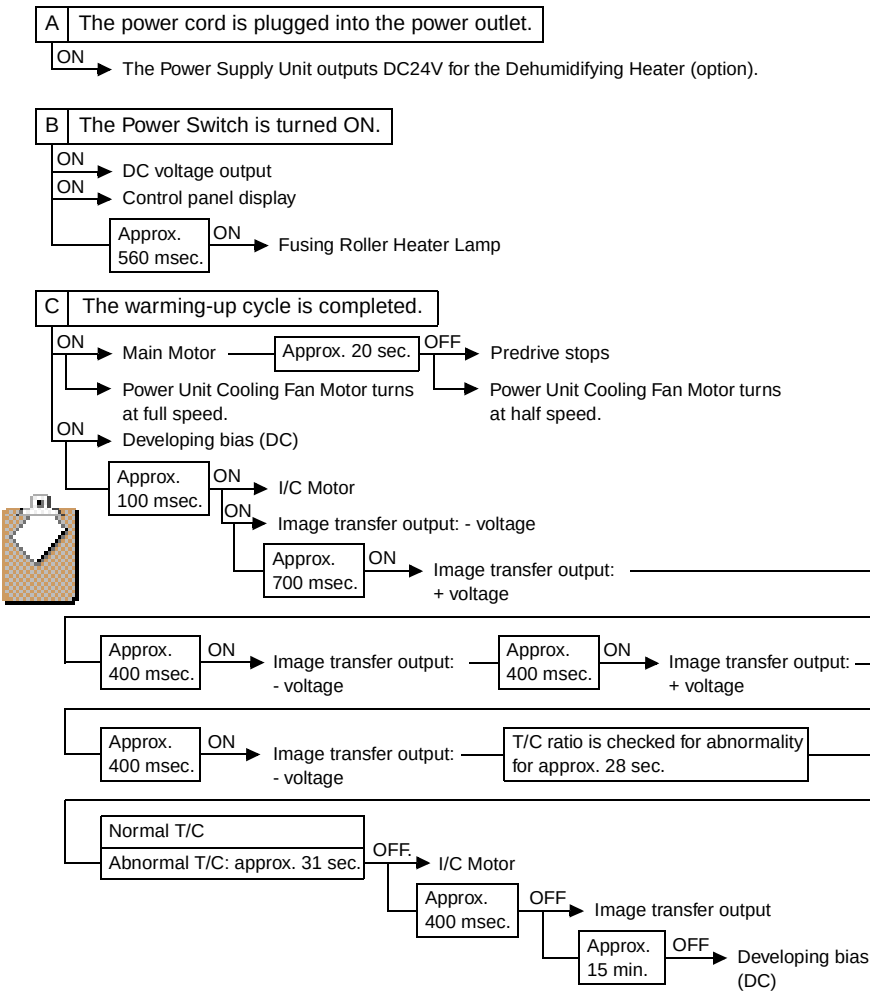
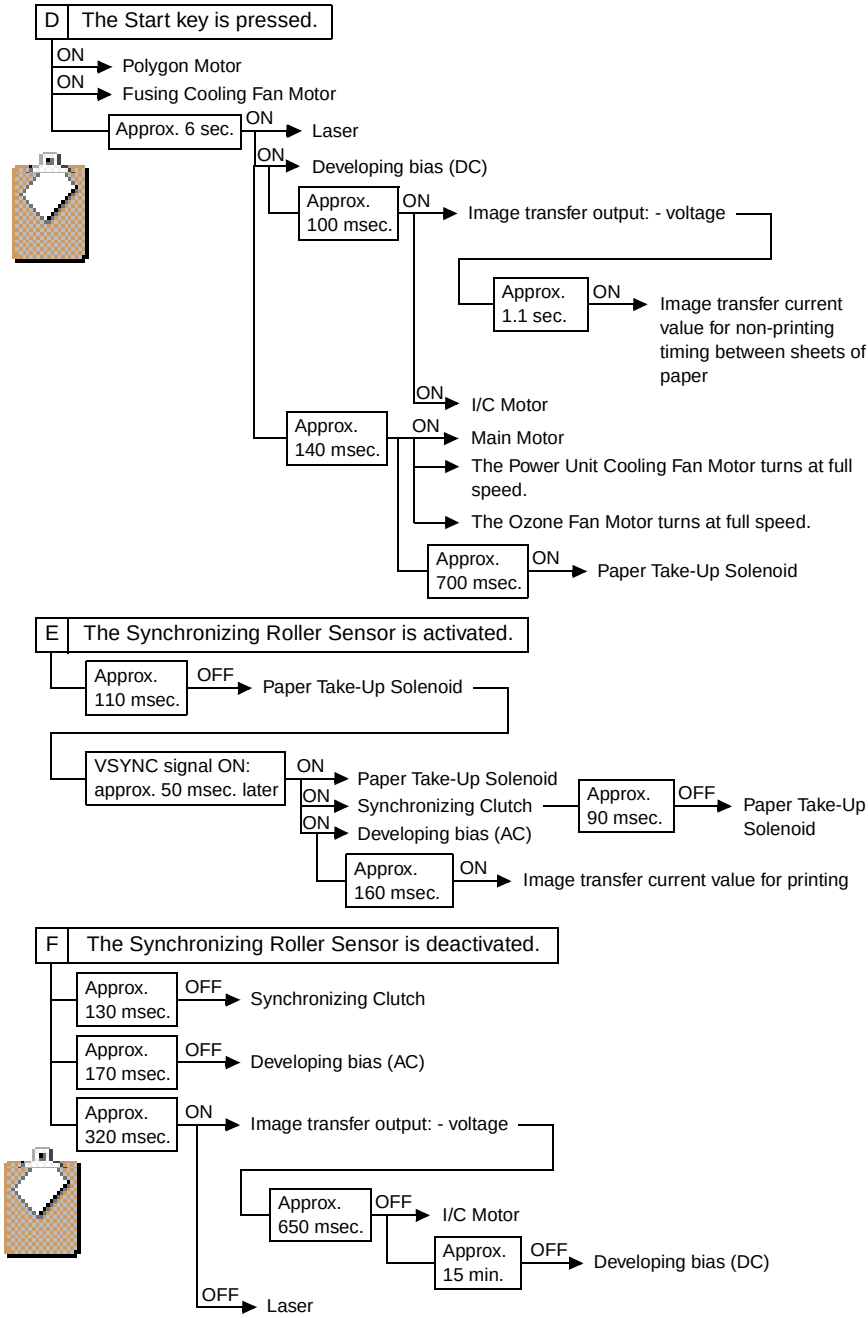
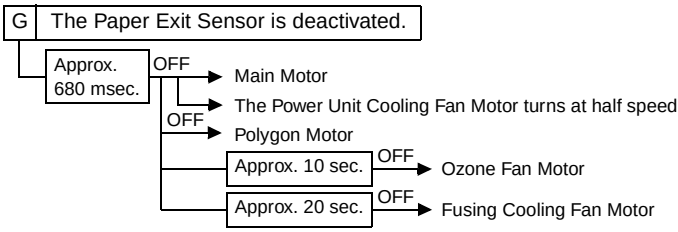
4 OPERATING SEQUENCE




D The Start key is pressed.
ON
Polygon Motor
ON
Fusing Cooling Fan Motor
Approx. 6 sec.
ON
Laser
ON
Developing bias (DC)
Approx. 100 msec.
ON
Image transfer output: - voltage
Approx. 1.1 sec.
ON
Image transfer current value for non-printing timing between sheets of paper
ON
I/C Motor
Approx. 140 msec.
ON
Main Motor
The Power Unit Cooling Fan Motor turns at full speed.
The Ozone Fan Motor turns at full speed.
Approx. 700 msec.
ON
Paper Take-Up Solenoid
E The Synchronizing Roller Sensor is activated.
Approx. 110 msec.
OFF
Paper Take-Up Solenoid
VSYNC signal ON: approx. 50 msec. later
ON
Paper Take-Up Solenoid
ON
Synchronizing Clutch
Approx. 90 msec.
OFF
Paper Take-Up Solenoid
ON
Developing bias (AC)
Approx. 160 msec.
ON
Image transfer current value for printing
F The Synchronizing Roller Sensor is deactivated.
Approx. 130 msec.
OFF
Synchronizing Clutch
Approx. 170 msec.
OFF
Developing bias (AC)
Approx. 320 msec.
ON
Image transfer output: - voltage
Approx. 650 msec.
OFF
I/C Motor
Approx. 15 min.
OFF
Developing bias (DC)
OFF
Laser


G
The Paper Exit Sensor is deactivated.
Approx. 680 msec.
OFF
Main Motor
The Power Unit Cooling Fan Motor turns at half speed.
OFF
Polygon Motor
Approx. 10 sec.
OFF
Ozone Fan Motor
Approx. 20 sec.
OFF
Fusing Cooling Fan Motor

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5 CPU OVERRUN MONITOR FUNCTION

- CPU Overrun Monitor Function (Watchdog Function)
  The watchdog function is a self-monitoring function that determines whether any of the CPUs mounted on the control board overrun.
- If this function detects that a CPU overruns, the copier automatically resets the CPU, thereby restarting the logic circuit and mechanism.
- Even if a copier CPU operates erratically due to electrical noise, therefore, the copier is able to recover from the faulty condition so that the number of visits made by the Tech. Rep. for CPU overrun can be minimized.

- Processing performed during watchdog function:
  If a faulty condition is detected, the copier resets the CPU and performs a restart sequence. Since this sequence of operations is performed even during a copy cycle, the copier detects a sheet or sheets of paper left inside it as a misfeed while it is being restarted.

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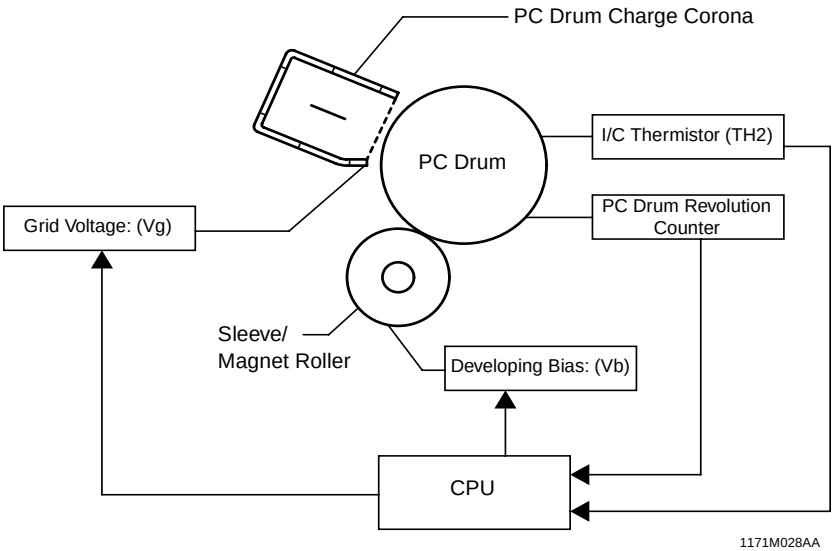
6 IMAGE STABILIZATION SYSTEM

- The following image stabilization controls are provided to ensure stabilized copy image.

Item	Purpose	Control
PC Drum temperature correction	To compensate for any change in ID due to changing PC Drum temperatures.	The I/C Thermistor is used to detect temperature and, according to the detected temperature, Vg/Vb is corrected.
PC Drum deterioration correction	To compensate for degraded sensitivity caused by a deteriorating PC Drum.	Corrects Vg according to the period of time during which the PC Drum has turned.



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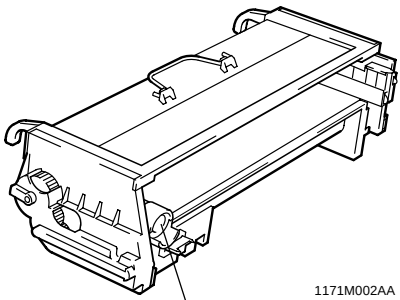
7 IMAGING CARTRIDGE (I/C)

- This copier employs an Imaging Cartridge (“I/C” in this manual) that contains a PC Drum, PC Drum Charge Corona, Developing Unit, and Cleaning Unit as one unit.



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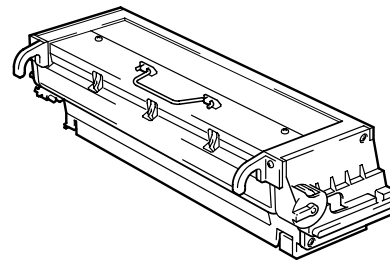

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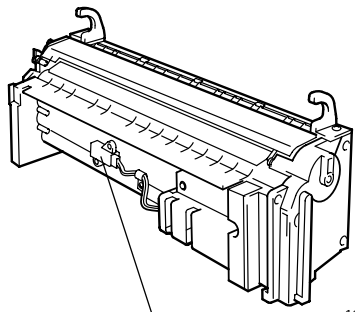

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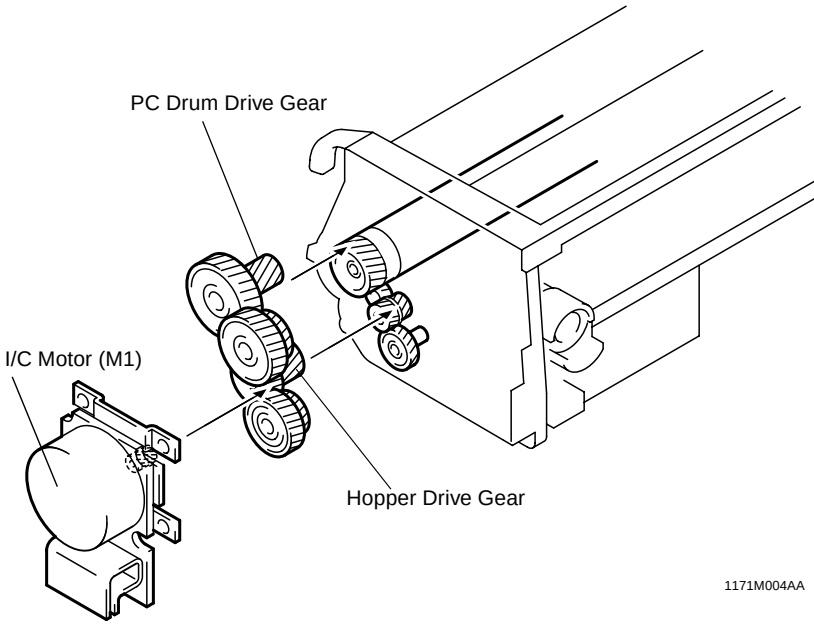
7-1. I/C Drive Mechanism

- Drive from the I/C Motor is transmitted via a gear train to the PC Drum and Hopper.



Electrical Component	Control Signal	ON	OFF
M1	PJ16A-3	L	H

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7-2. Identification and Life of I/C

- When the Start key is pressed or the Side Cover is opened and closed, the copier determines whether the I/C is new or one which has been used previously.
- The copier monitors the I/C life by storing in memory the period of time during which the PC Drum has turned. The data is cleared when a new I/C is installed in the copier.

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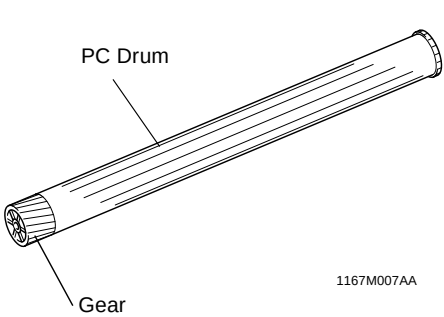
8 PC DRUM

- The PC Drum used in this copier is the organic photoconductor (OPC) type. The drum consists of an aluminum base coated with a charge generation layer and a charge transport layer.

Handling Precautions

Prolonged exposure to light can cause the photoconductor surface of the drum to suffer light fatigue, resulting in a loss of photosensitivity. If the I/C is removed from the copier, it should be wrapped in a soft, clean, opaque cloth or other protective covering to prevent exposure to light.



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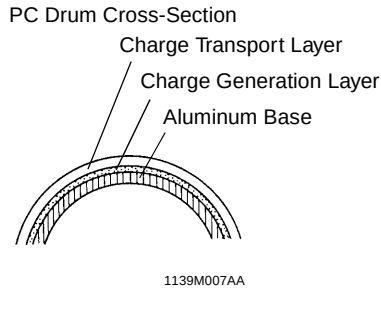

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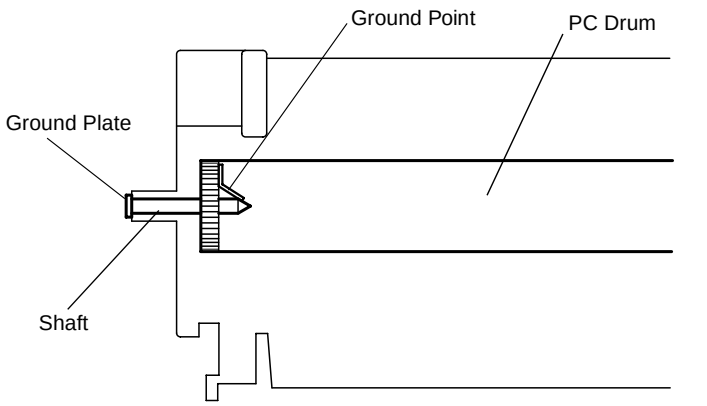
- Grounding of the PC Drum
  The PC Drum ground point is located inside and at the front end of the I/C as viewed from the front of the copier and in constant contact with the Drum Holding Shaft. When the I/C is installed in the copier, the Drum Holding Shaft contacts the ground point. This provides for assured grounding of the PC Drum through the ground plate in the rear to the frame of the copier.



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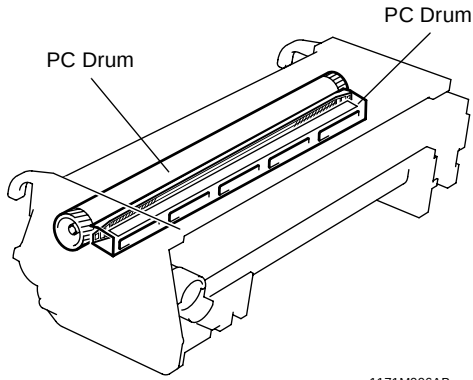
9 DRUM CHARGING

- A scorotron charger system generates a negative DC corona discharge onto the PC Drum surface. The grid mesh ensures uniform charging.
- The grid voltage (Vg) applied to the grid mesh is controlled by the constant voltage circuitry within the High Voltage Unit. It is varied through image stabilization control.
- To restrict ozone production, the copier uses a PC Drum Charge Corona with a comb electrode.



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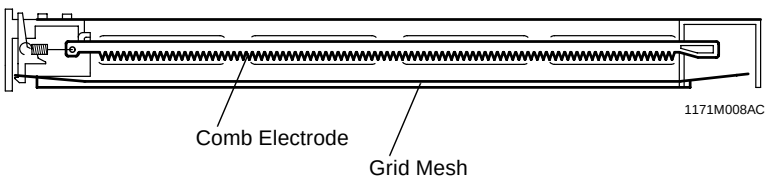


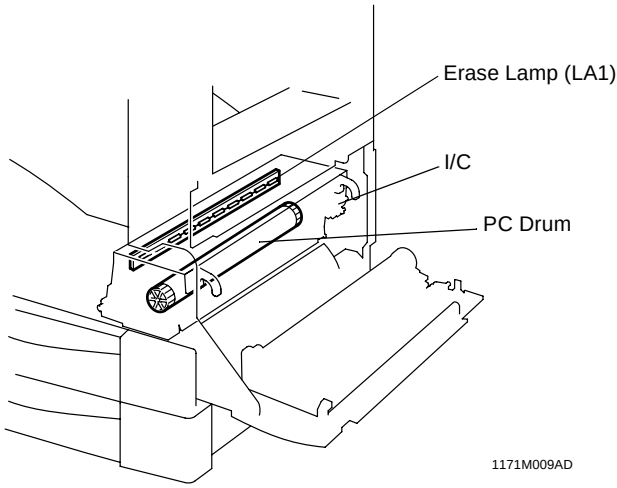
1171M008AC

Electrical Component	Control Signal	ON	OFF
Drum charging output	PJ14A-3A	L	H

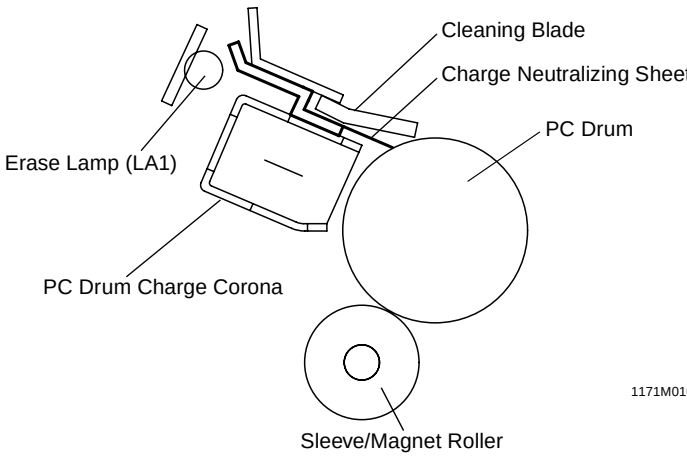
1171SBM1000A

10 ERASE LAMP

- Any potential remaining on the surface of the PC Drum is neutralized by both light from the Erase Lamp and a DC negative voltage applied by the Charge Neutralizing Sheet.
- The Charge Neutralizing Sheet applies a negative charge on the surface of the PC Drum which is positively charged by the Image Transfer Roller. A voltage of -820V is applied to the Charge Neutralizing Sheet from the High Voltage Unit. The Erase Lamp then illuminates the surface of the PC Drum to further neutralize it.
- The Erase Lamp consists of ten tungsten lamps.



1171M009AD



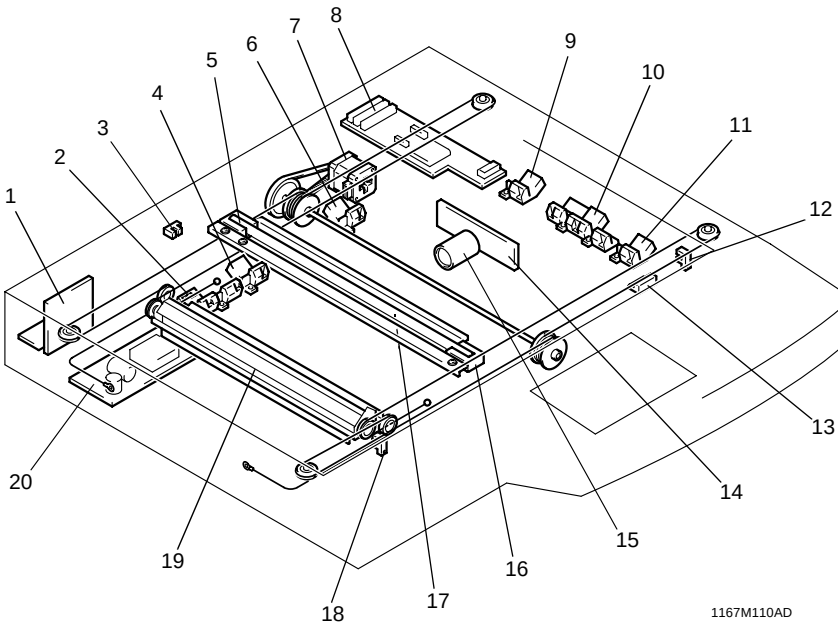
1171M010AD

Electrical Component	Control Signal	All lamps ON	Standby ON
LA1	PJ11A-6A	H	L

1171SBM1100A

11 IR SECTION

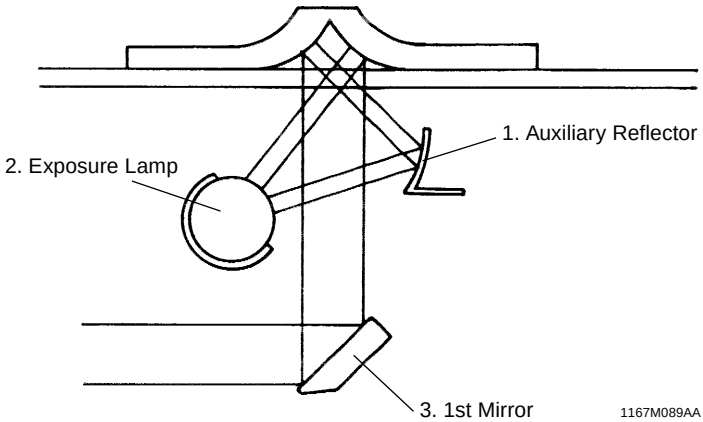
- Light reflected from the original passes through three mirrors and a lens to form a reduced image on the CCD Sensor as the Scanner is moved by the Scanner Motor. The CCD sensor converts the light pattern (image data) into an electrical image signal.
- The electrical image signal is then output to the MFB Board.



1. BCR Board (BCR)
2. Original Size Detecting Sensor 5 (UN8)
3. Original Cover Detecting Sensor (PC14)
4. Original Size Detecting Sensor 4 (UN7)
5. Exposure Lamp (LA2)
6. Original Size Detecting Sensor 6 (UN9)
7. Scanner Motor (M5)
8. HGB Board (HGB)
9. Original Size Detecting Sensor 1 (UN4)
10. Original Size Detecting Sensor 2 (UN5)
11. Original Size Detecting Sensor 3 (UN6)
12. Scanner Home Position Sensor 1 (PC12)
13. Size Reset Switch (S5)
14. CCD Board (CCD)
15. Lens
16. Scanner
17. 1st Mirror
18. Scanner Home Position Sensor 2 (PC13)
19. 2nd/3rd Mirrors Carriage
20. Inverter Board (INV)

1171SBM1101A

11-1. Exposure Section: Construction and Function



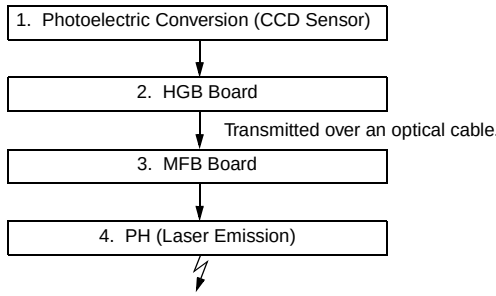
1. Auxiliary Reflector
   When a book or other bound original is copied, the paper in the area near the binding generally fails to come flush against the glass, so that the copy of these areas is generally too dark. The Auxiliary Reflector reduces this problem by reflecting light from the Exposure Lamp onto these areas of the original.
2. Exposure Lamp
   A fluorescent lamp is used to illuminate the original.
3. 1st Mirror
   Directs the reflected light from the original to the 2nd Mirror.

Electrical Component	Control Signal	ON	OFF
LA2	CN13BCR-1	L	H

1171SBM1102A

11-2. Image Processing Flow

- Image processing is made up of the following blocks.



1. Photoelectric Conversion (CCD Sensor)
- Light reflected off the original is received through mirrors and lens by the CCD Sensor which, in turn, outputs the corresponding data to the HGB Board.

2. HGB Board
- After converting the data received from the CCD to an analog signal, the board converts it to 8-bit image data (A/D conversion). It further makes various corrections and outputs the resultant image data to the MFB Board over an optical cable.

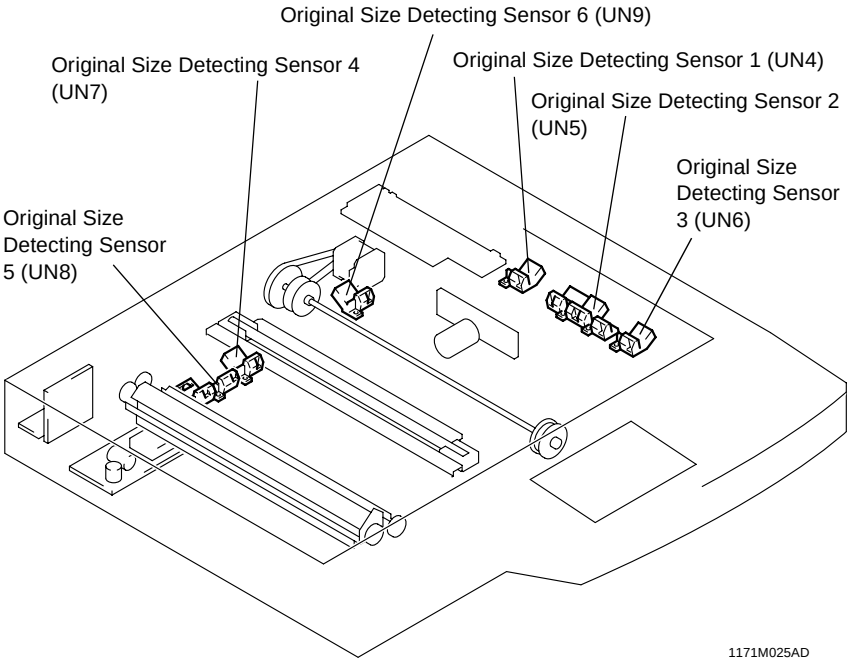
3. MFB Board
- This board compresses the image data received from the HGB Board, stores it, and uncompresses it.
- The image memory has a standard capacity of 16MB and can be expanded up to 64MB (optional).

4. PH
- Emits a laser beam according to the image data provided by the MFB Board to expose the surface of the PC Drum.

1171SBM1103A

11-3. Original Size Detection

- When the copier is in Auto Paper or Auto Size, the sensors mounted in the IR receive light reflected off the original to allow the copier to determine the original size.


Original Size Detecting Sensor 6 (UN9)
Original Size Detecting Sensor 4 (UN7)
Original Size Detecting Sensor 1 (UN4)
Original Size Detecting Sensor 2 (UN5)
Original Size Detecting Sensor 3 (UN6)
Original Size Detecting Sensor 5 (UN8)
1171M025AD

Electrical Component	Control Signal	Blocked	Unblocked
UN4	CN4BCR-4	L	H
UN5	CN5BCR-7	L	H
UN6	CN11HGB-4	L	H
UN7	CN6BCR-4	L	H
UN8	CN9HGB-1	L	H
UN9	CN8BCR-4	L	H

<Original Size Identification: Metric Areas>

Original Size	UN4	UN5			UN6	UN7	UN8		UN9
	S1	S2	S3	S4	S5	S6	S7	S8	S9
11" × 17"	❍	❍	❍	❍		❍	❍	❍	❍
A3L	❍	❍	❍	❍	❍	❍	❍	❍	❍
A4L	❍	❍				❍			❍
A4C	❍	❍	❍	❍	❍				❍
A5L									❍
B4L	❍	❍	❍			❍	❍	❍	❍
FLS	❍	❍				❍	❍		❍
Letter L	❍	❍							❍
Letter C	❍	❍	❍	❍					❍
Legal	❍	❍				❍	❍	❍	❍

❍: Detected by sensor; L: Lengthwise; C: Crosswise

NOTE
UN4, UN6 and UN8 are options.

<Original Size Identification: Inch Areas>

Original Size	UN5			UN6	UN7	UN8		UN9
	S2	S3	S4	S5	S6	S7	S8	S9
11" × 17"	❍	❍	❍		❍	❍	❍	❍
A3L	❍	❍	❍	❍	❍	❍	❍	❍
A4L	❍				❍			❍
A4C	❍	❍	❍	❍				❍
B4L	❍	❍			❍	❍	❍	❍
5-1/2" × 8-1/2"L								❍
FLS	❍				❍	❍		❍
B5C	❍	❍						❍
Letter L	❍							❍
Letter C	❍	❍	❍					❍
Legal	❍				❍	❍	❍	❍

❍: Detected by sensor; L: Lengthwise; C: Crosswise

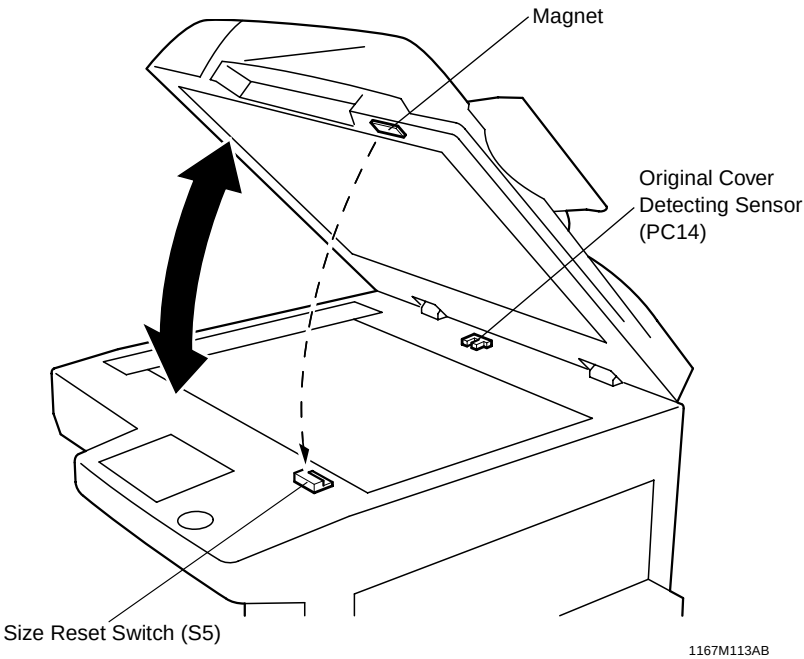
NOTE
UN6, UN8 and UN9 are options.

1171SBM1104A

11-4. Original Size Detection Timing

The copier CPU affirms and resets the readings of the original size at the following timings.

- Takes size readings:
  When the Original Cover Detecting Sensor is deactivated.
- Affirms size readings:
  When the Start key is pressed with the Original Cover Detecting Sensor activated or the Size Reset Switch deactuated.
- Resets size readings:
  When the Size Reset Switch is deactuated.



Electrical Component	Control Signal	ON	OFF
S5	CN9BCR-2	L	H

Electrical Component	Control Signal	Unblocked	Blocked
PC14	CN10BCR-2	L	H

1171SBM1105A

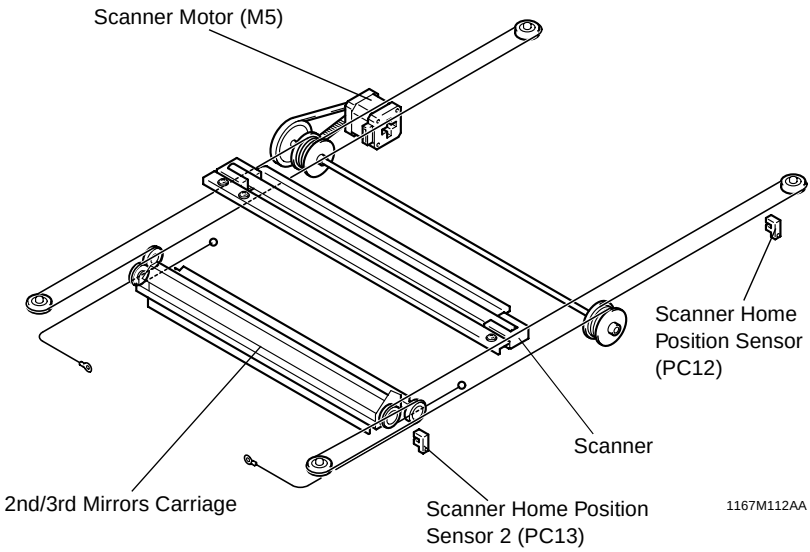
11-5. Scanner and 2nd/3rd Mirrors Carriage Moving Mechanism

<Scanner>

- During a scan, the Scanner projects an even amount of light from the Exposure Lamp onto the entire surface of the original. The light is reflected from the original to the 1st Mirror of the scanner and then to the 2nd and 3rd Mirrors.
- The Scanner is driven by the Scanner Motor and front and rear Scanner Drive Cables.
- Scanner speed is determined by the set zoom ratio in reference to the full size mode.
- The Scanner is at home position when Scanner Home Position Sensor 1 is blocked. This position serves as the reference for the scan motion.
- Scanner Home Position Sensor 2 determines the home position of the Scanner when AF-7 is used.

<2nd/3rd Mirrors Carriage>

- The 2nd and 3rd Mirrors are mounted to their holder at right angles to each other. They direct the light reflected off the 1st Mirror through the lens to the CCD.
- The 2nd/3rd Mirrors Carriage is also moved by the Scanner Drive Cables and pulleys driven by the Scanner Motor. It travels at a speed half that of the Scanner, thereby keeping constant the optical path length between the Original Glass and lens.



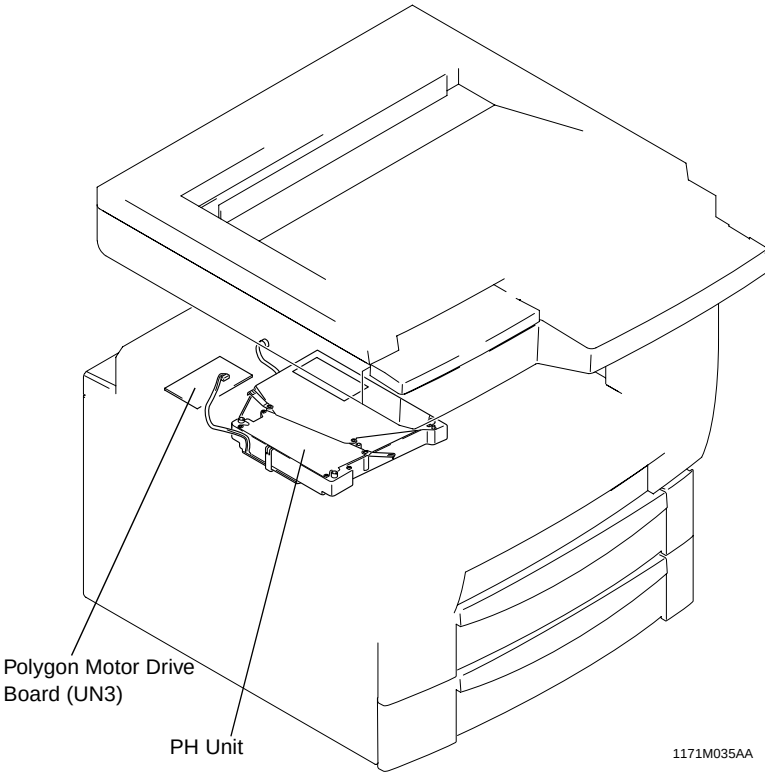
Electrical Component	Control Signal	Forward Rotation	Backward Rotation
M5	CN3BCR-1~3	Pulse output	

Electrical Component	Control Signal	Blocked	Unblocked
PC12	CN11BCR-1	L	H
PC13	CN12BCR-1	L	H

1171SBM1200A

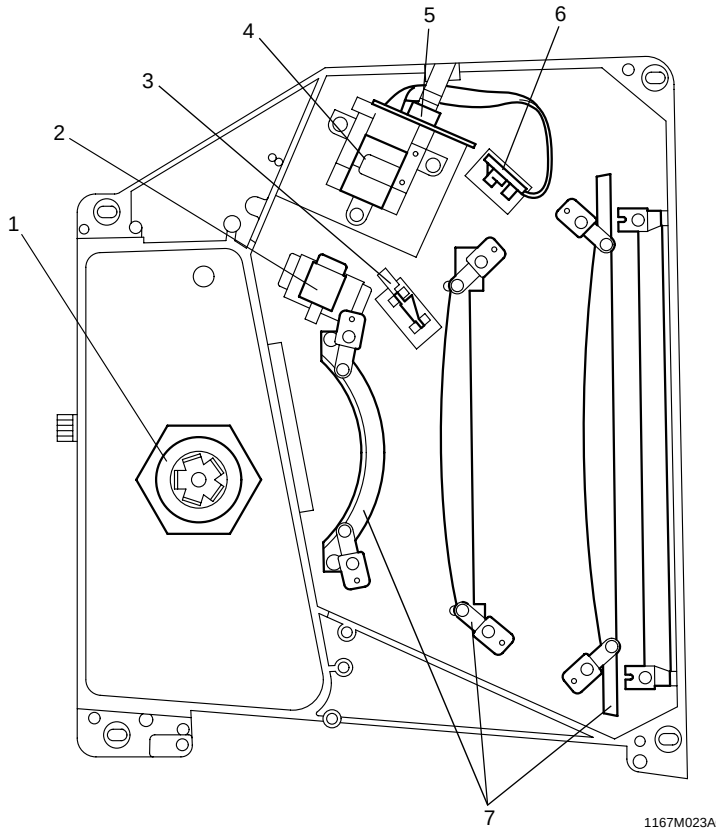
12 PH SECTION

- Based on the image data output from the MFB Board, the LD (laser diode) is activated and the corresponding light strikes the surface of the PC Drum.



1171SBM1201A

12-1. PH Components



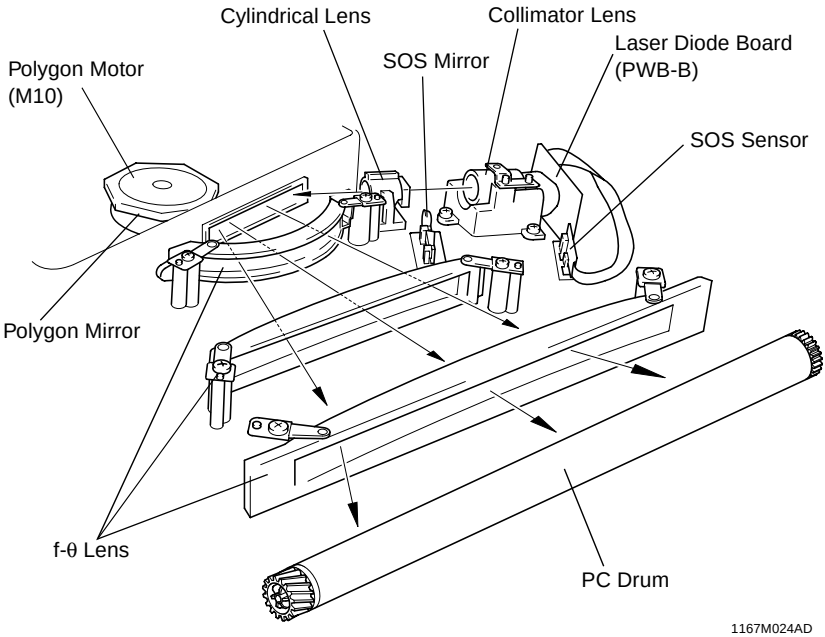
1. Polygon Motor (M10)
2. Cylindrical Lens
3. SOS Mirror
4. Collimator Lens
5. Laser Diode Board (PWB-B)
6. SOS Sensor
7. f-θ Lens

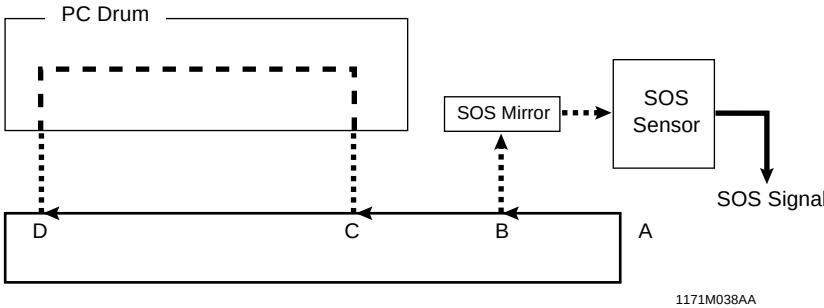
Electrical Component	Control Signal	ON	OFF
M10	PJ8A-3	L	H

1171SBM1202A

12-2. Laser Emission Timing (SOS Signal)

- The signal output from the Master Board triggers the firing of the laser. The laser beam travels to the Polygon Mirror, lens, and SOS Mirror to eventually hit the SOS Sensor, which generates an SOS signal.
- The SOS signal determines the laser emission timing for each line in the main scanning direction.



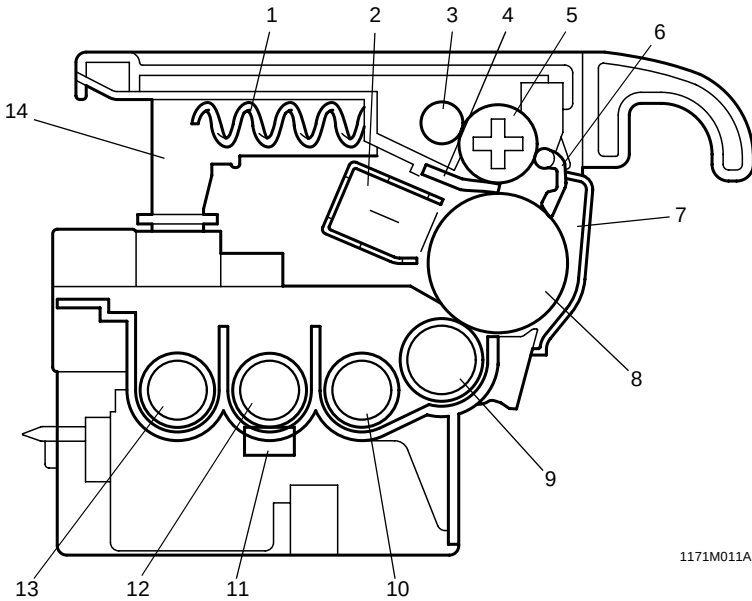


A to B: LD activation
B to C: LD OFF
C to D: Laser beam exposure area according to the image data

1171SBM1300A

13 DEVELOPING UNIT

- The Toner Conveying Rollers mix the toner and carrier particles together and carry the toner/carrier mixture up to the Sleeve/Magnet Roller. The magnetic brush formed on the surface of the roller allows the toner to come into contact with the charges on the surface of the PC Drum, thus forming an electrostatic latent image.



1. Spent Toner Recycling Coil
2. PC Drum Charge Corona
3. Spent Toner Feed Roller 2
4. Cleaning Blade
5. Spent Toner Feed Roller 1
6. PC Drum Paper Separator Finger
7. PC Drum Protective Shutter
8. PC Drum
9. Sleeve/Magnet Roller
10. 1st Toner Conveying Roller
11. ATDC Sensor (E1)
12. 2nd Toner Conveying Roller
13. 3rd Toner Conveying Roller
14. Spent Toner Recycling Duct

1171SBM1301A

13-1. Sleeve/Magnet Roller

- This copier employs the MT-HG system with a Sleeve/Magnet Roller having the following magnetic characteristics.
- Turning of the sleeve surrounding the Magnet Roller ensures that fresh developer from the Developer Mixing Chamber is always being conveyed to the point of development with respect to the PC Drum.

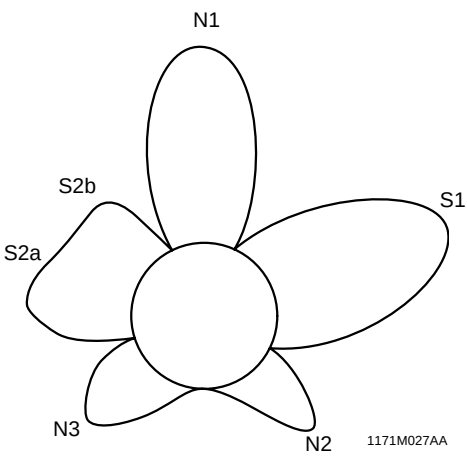
N1 : The point of development with the maximum magnetic flux density which ensures that the carrier is firmly held onto the Sleeve Roller when toner is attracted to the latent image.

S1, N2 : The magnetic flux density between these two poles is made low to ensure that the developer remaining on the surface of the Sleeve Roller is smoothly recycled. They also prevent developer from scattering.

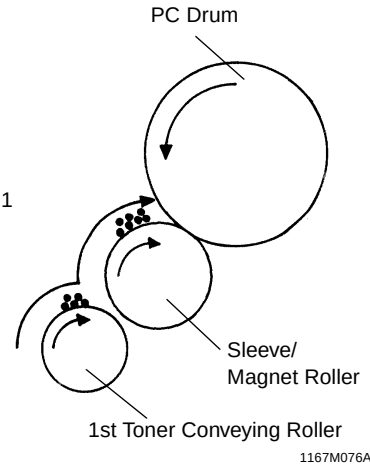
N3 : The developer brush is formed by this pole and its height is moderated before the brush is regulated by the Doctor Blade.

S2a : This pole ensures that the developer is conveyed to the point of development over the wide interval between N3 and N1.

S2b : If developer is compacted and clogs at the Doctor Blade and, as a result, part of the surface of the Sleeve/Magnet Roller is not covered with developer, the nearby developer around this pole with a weak magnetic force goes to those uncovered areas. This helps prevent white lines from occurring on the copy.



1171M027AA

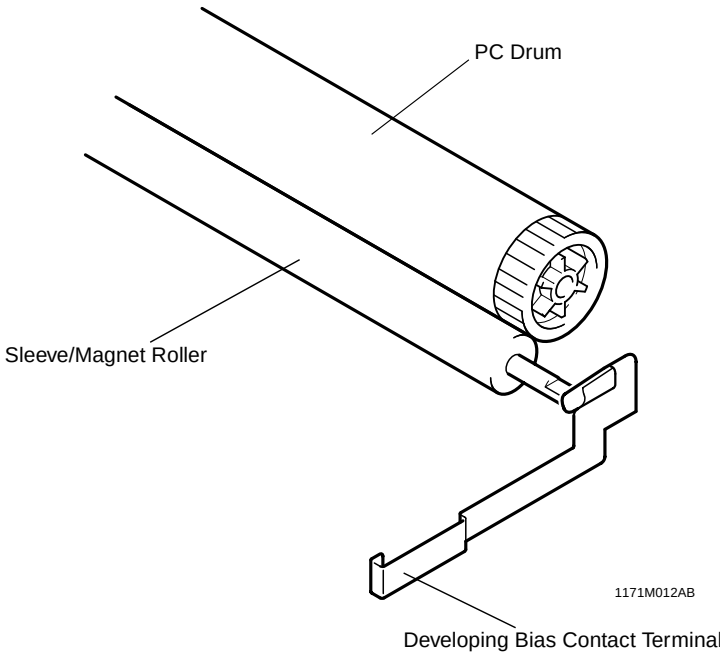


1167M076AB

1171SBM1302A

13-2. Developing Bias

- The amount of toner attracted onto the surface of the PC Drum is controlled by varying the developing bias voltage.
- As the PC Drum deteriorates and its photoconductive layer begins to wear, it becomes more sensitive to the increase in the amount of toner. As a countermeasure against this problem, the developing bias voltage is automatically switched according to the PC Drum temperature, thereby stabilizing the image quality level.



Electrical Component	Control Signal	ON	OFF
Vb	PJ14A-1A	L	H

1171SBM1303A

13-3. ATDC Sensor

- The ATDC Sensor automatic adjustment is made when a new I/C is installed in the copier. Toner replenishing control is thereafter controlled as detailed in the following.

1. ATDC Sensor Automatic Adjustment

- The ATDC Sensor is automatically adjusted when a new I/C is loaded in the copier. During this sequence, the copier reads the sensor output value and sets it as the reference. This reference value is stored in memory and used until the I/C reaches its service life.

2. Toner Replenishing Control

- While the I/C Motor is turning, the ATDC Sensor samples T/C and, according to the readings, the copier provides the following controls.

T/C Ratio (%)	Sampling Data (V)	Control Details
More than 19	Less than 1.41	Defective ATDC Sensor
14 to 19	2.32 to 1.41	Toner replenished for 0 msec.
13 to 14	2.50 to 2.32	Toner replenished for 54 msec. at intervals of approx. 1 sec.
12 to 13	2.68 to 2.50	Toner replenished for 150 msec. at intervals of approx. 1 sec.
10 to 12	3.10 to 2.68	Toner replenished for 378 msec. at intervals of approx. 500 msec.
7 to 10	3.92 to 3.10	Passed onto the T/C recovery mode.
Less than 7	More than 3.92	Defective ATDC Sensor

✻ Toner replenishment represents the operation of the Sub Hopper Toner Replenishing Motor.

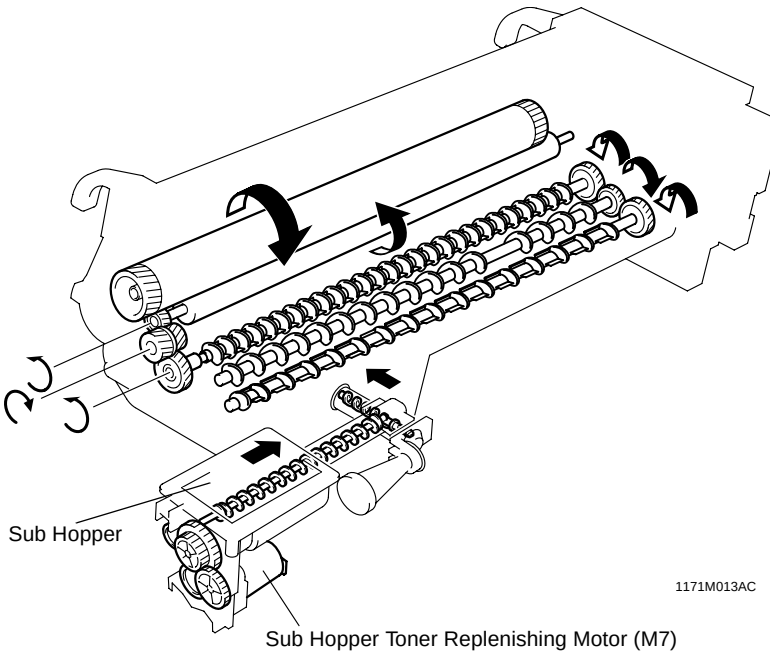
3. Toner Empty Control (T/C Recovery Mode)

- When the control is passed onto the T/C recovery mode, the Sub Hopper Toner Replenishing Motor is energized to replenish the supply of toner into the Developing Unit and, if T/C is recovered to a level of 14% or higher (2.32V or less) within 150 sec., it resets the toner-empty condition.

1171SBM1304A

13-4. Sub Hopper Toner Replenishing Mechanism

- Toner is replenished from the Sub Hopper to the Developing Unit by turning the Sub Hopper Toner Replenishing Motor for the period of time controlled by the ATDC output voltage (T/C).

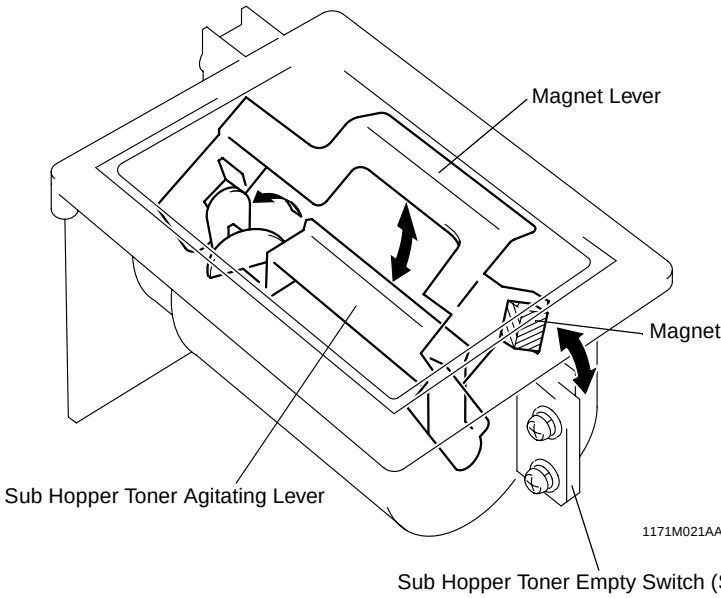


Electrical Component	Control Signal	ON	OFF
M7	PJ11A-8A	DC24V	L

1171SBM1305A

13-5. Sub Hopper Toner Empty Detecting Mechanism

- A toner-empty condition in the Sub Hopper is detected by the Magnet Lever that moves up and down as the Sub Hopper Toner Agitating Lever turns and actuates and deactuates the Sub Hopper Toner Empty Switch.
- While the amount of toner in the Sub Hopper is more than the predetermined amount, the Magnet Lever rests on the toner, keeping the Sub Hopper Toner Empty Switch deactuated even when the Sub Hopper Toner Agitating Lever turns. As toner is consumed, the Magnet Lever lowers to eventually actuate the Sub Hopper Toner Empty Switch, at which timing the copier detects a toner-empty condition in the Sub Hopper.

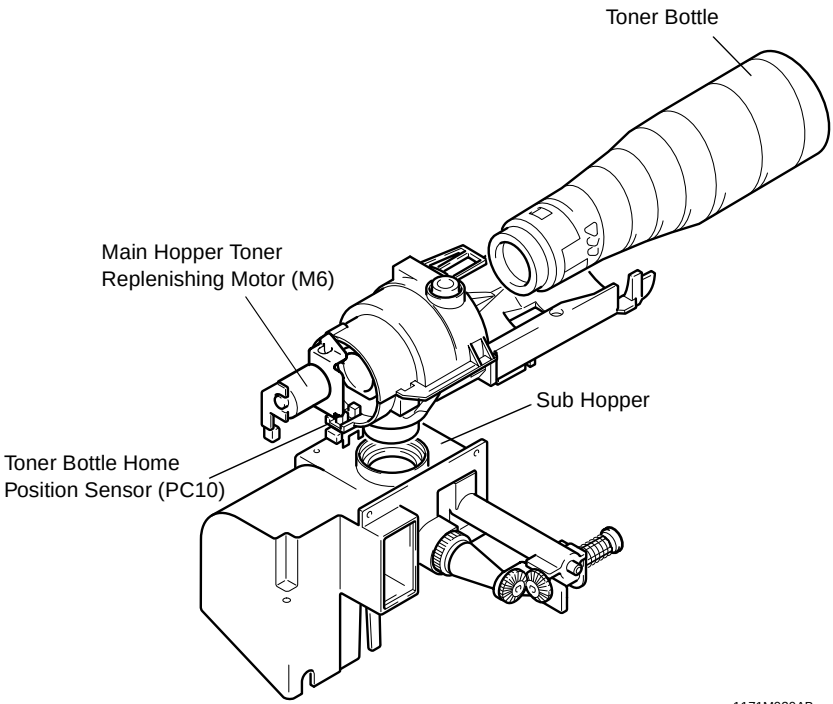


Electrical Component	Control Signal	ON	OFF
S4	PJ11A-7B	L	H

1171SBM1306A

13-6. Main Hopper Toner Replenishing Mechanism

- When a toner-empty condition in the Sub Hopper is detected, the Main Hopper Toner Replenishing Motor is energized to turn the Toner Bottle, thereby supplying toner from the Main Hopper to the Sub Hopper.
- The Toner Bottle Home Position Sensor mounted on the coupling ensures that the Toner Supply Port in the Toner Bottle is positioned at the top whenever the bottle is stopped.
- The Toner Bottle Cover Sensor detects whether the Toner Bottle Cover is open. If the cover is open, the copier does not authorize the initiation of a new copy cycle. If the cover is opened during a copy cycle, the copier interrupts the cycle.



1171M020AB

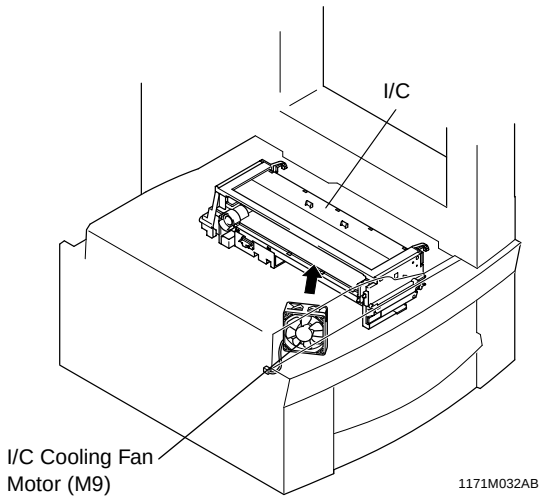
Electrical Component	Control Signal	ON	OFF
M6	PJ11A-4A	DC24V	L

Electrical Component	Control Signal	Unblocked	Blocked
PC10	PJ11A-2B	L	H

1171SBM1307A

13-7. I/C Cooling Fan Motor

- The I/C Cooling Fan Motor prevents the temperature inside the copier (around the entire I/C) from rising inordinately.

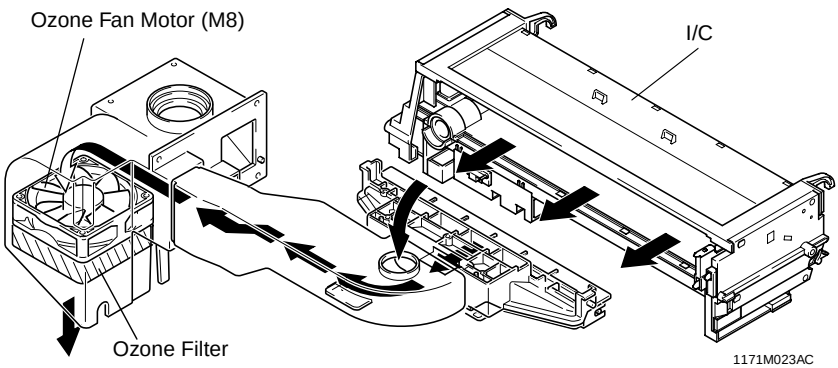


Electrical Component	Control Signal	ON	OFF
M9	PJ18A-10	DC24V	L

1171SBM1308A

13-8. Ozone Fan Motor

- Ozone produced by the PC Drum Charge Corona is absorbed by the Ozone Filter from the air being drawn out of the copier by the Ozone Fan Motor.



Electrical Component	Control Signal	ON	OFF
M8	PJ11A-1A	DC24V	L

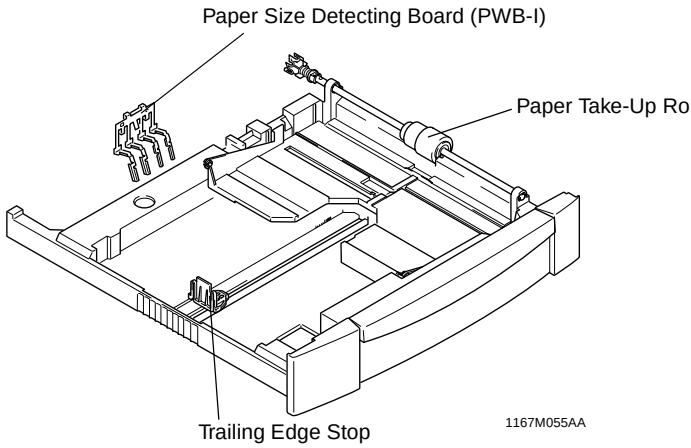
1171SBM1400A

14 PAPER TAKE-UP/FEED SECTION

NOTE

- For the details of the 2nd Cassette (500-Sheet Cassette), see the relevant option service manual.

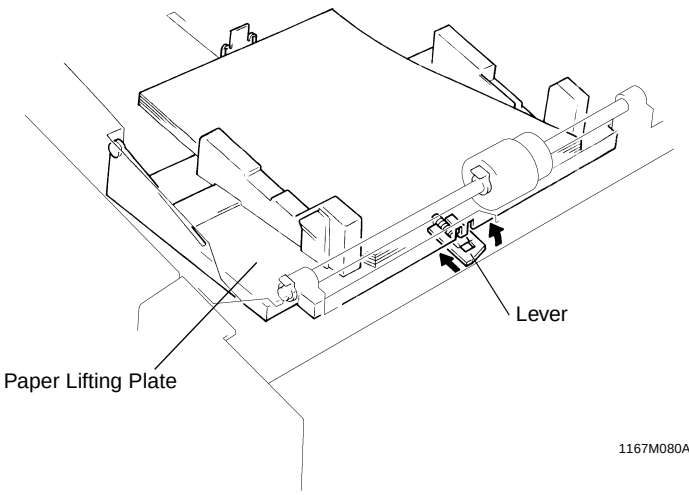
- This copier employs the Multi-Purpose (MP) Cassette whose capacity is about 250 sheets (about 20 sheets for special paper).



1171SBM1401A

14-1. MP Cassette Paper Lifting Plate

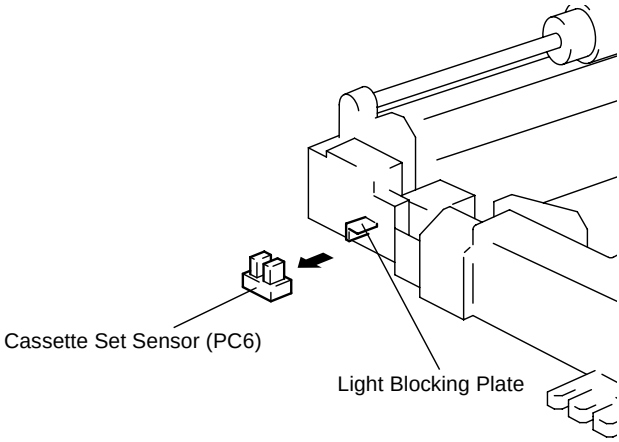
- The Paper Lifting Plate installed in the MP Cassette is spring-loaded to push the paper stack upward. When the cassette is slid into the copier, the lever located on the bottom of the cassette and used to lock down the Paper Lifting Plate is pushed and unlocked, allowing the Paper Lifting Plate to push the paper stack upward.



1171SBM1402A

14-2. MP Cassette-in-Position Detection

- When the MP Cassette is slid into the copier, the light blocking plate located in the rear of the cassette blocks the Cassette Set Sensor and the copier determines that the MP Cassette has been slid into position.



1167M052AB

Electrical Component	Control Signal	Unblocked	Blocked
PC6	PJ13A-5B	H	L

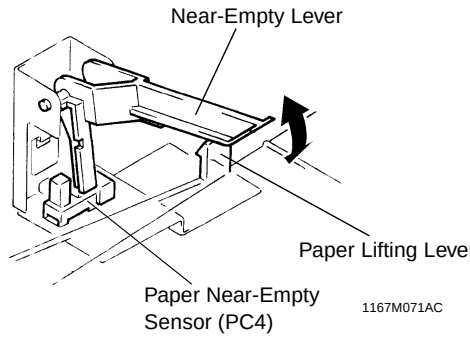
1171SBM1403A

14-3. MP Cassette Paper Empty Detection

- Two sensors are used in this copier: the Paper Empty Sensor detects a paper-empty condition, while the Paper Near-Empty Sensor detects a paper near-empty condition.

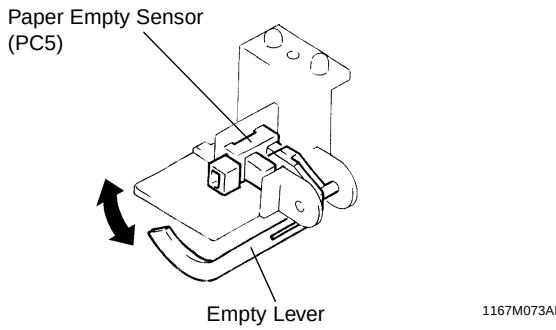
Paper Near-Empty Detection:

- A paper near-empty condition is detected as the paper is consumed and when the Near-Empty Lever lowers to eventually block the sensor (L).
- At this time, the MP Cassette Paper Empty LED starts blinking.
- A paper-empty condition results when about 50 more sheets of paper are used after the near-empty condition has been detected.



Paper Empty Detection:

- A paper-empty condition is detected as the paper is consumed and when the Empty Lever lowers to eventually block the sensor (L).
- At this time, the MP Cassette Paper Empty LED lights up steadily.



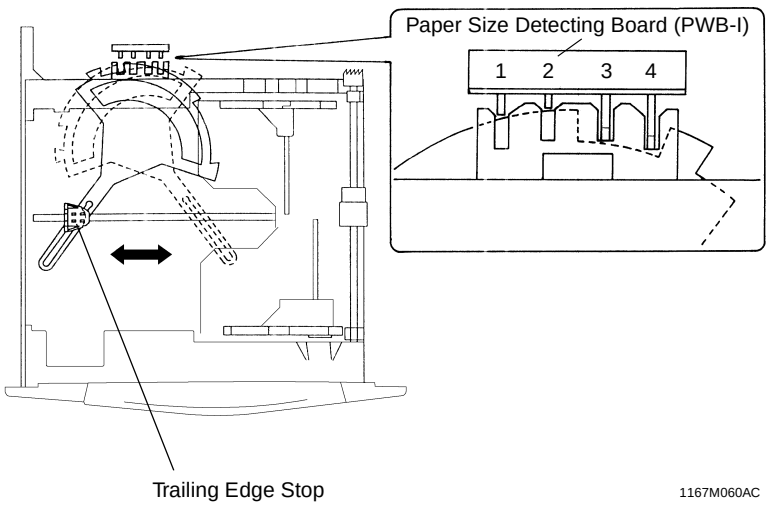
Electrical Component	Control Signal	Unblocked	Blocked
PC4	PJ14A-13A	H	L
PC5	PJ13A-2B	H	L

1171SBM1404A

14-4. MP Cassette Paper Size Detection

- The Paper Size Detecting Board detects the length of the paper (FD).
- A lever is connected to the Trailing Edge Stop of the cassette and, as the stop is slid to the size of the paper loaded in the cassette, the lever is moved to turn ON and OFF the size detecting switches mounted on the copier side.
- The control panel settings are necessary for any paper size other than the following.

Paper Size Detecting Switches (PWB-I)				Paper Size
1	2	3	4	
ON	OFF	OFF	OFF	A3L, 11”×17”L
OFF	OFF	OFF	OFF	B4L, 8-1/2”×14”L
OFF	ON	ON	ON	A4L
ON	ON	ON	ON	B5L, 8-1/2”×11”L
ON	ON	OFF	OFF	A4C/A5L
ON	OFF	OFF	ON	B5C
OFF	ON	OFF	OFF	A5C
ON	ON	ON	OFF	8-1/2”×11”C

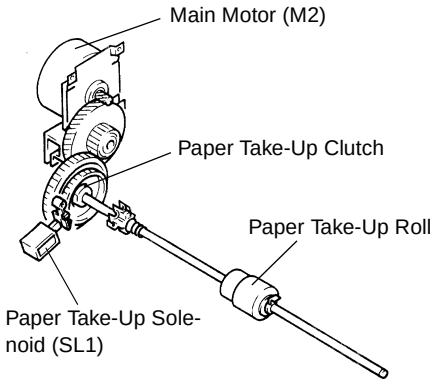


Electrical Component	Control Signal	ON	OFF
PWB-I (1)	PJ14A-1B	L	H
PWB-I (2)	PJ14A-2B	L	H
PWB-I (3)	PJ14A-3B	L	H
PWB-I (4)	PJ14A-4B	L	H

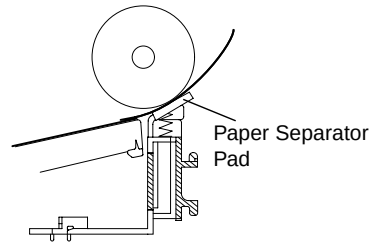
1171SBM1405A

14-5. Paper Take-Up Mechanism

- Drive from the Main Motor is transmitted to the Paper Take-Up Clutch (spring clutch) and, by energizing the Paper Take-Up Solenoid, the Paper Take-Up Roll is turned.
- The paper separating mechanism employs a Paper Separator Pad.



1167M038AB



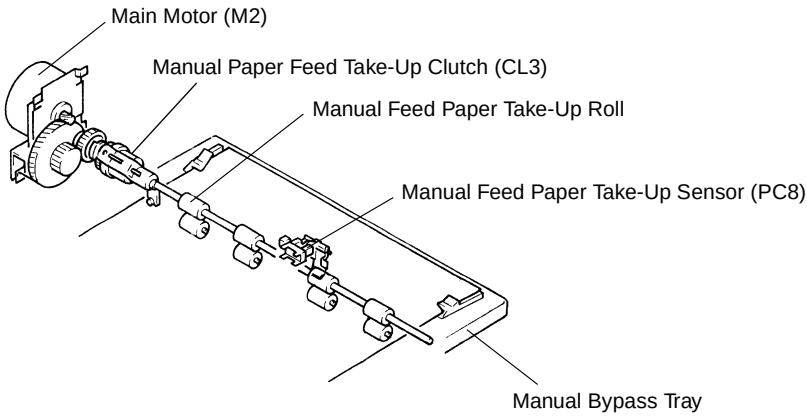
1167M054AB

1171SBM1406A

14-6. Manual Bypass Tray

1. Construction of the Manual Bypass Tray

- Drive from the Main Motor is transmitted to the Manual Paper Feed Take-Up Clutch and, by energizing this clutch, the Manual Feed Paper Take-Up Roll is turned.


Main Motor (M2)
Manual Paper Feed Take-Up Clutch (CL3)
Manual Feed Paper Take-Up Roll
Manual Feed Paper Take-Up Sensor (PC8)
Manual Bypass Tray

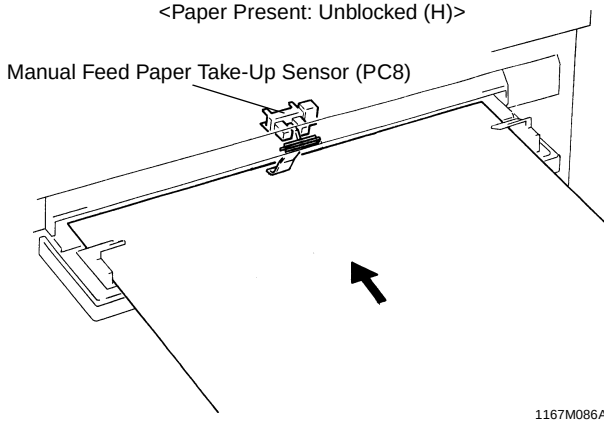
1167M067AC

Electrical Component	Control Signal	ON	OFF
M2	PJ16A-1	L	H
SL1	PJ13A-13B	L	H
CL3	PJ4A-9A	L	H

2. Manual Feed Paper Take-Up Detection

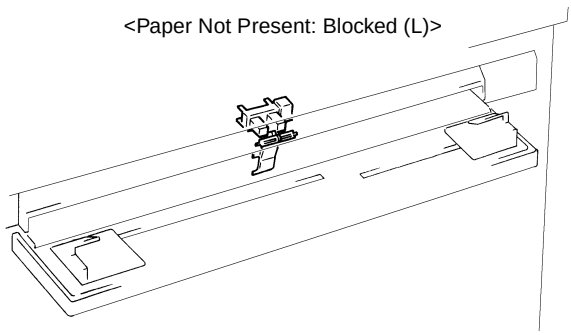
- The Manual Feed Paper Take-Up Sensor detects a sheet of paper that is fed via the Manual Bypass Tray.
- The size and type of the paper for manual feed are set on the control panel.

<Paper Present: Unblocked (H)>



1167M086AA

<Paper Not Present: Blocked (L)>



1167M085AA

Electrical Component	Control Signal	Unblocked	Blocked
PC8	PJ4A-7B	H	L

1171SBM1407A

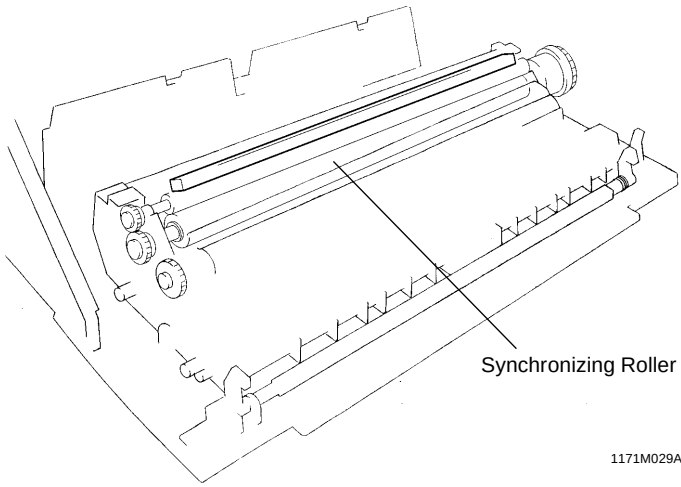
14-7. Paper Take-Up Retry Mechanism

- To minimize the occurrence of a paper misfeed due to a slippery Paper Take-Up Roll, the Paper Take-Up Solenoid is energized a second time if a sheet of paper fails to reach the Synchronizing Roller Sensor within a given period of time after the solenoid has been energized first.
- A paper take-up misfeed results if the sheet of paper does not reach the Synchronizing Roller Sensor even after two paper take-up sequences.

1171SBM1500A

15 SYNCHRONIZING ROLLERS

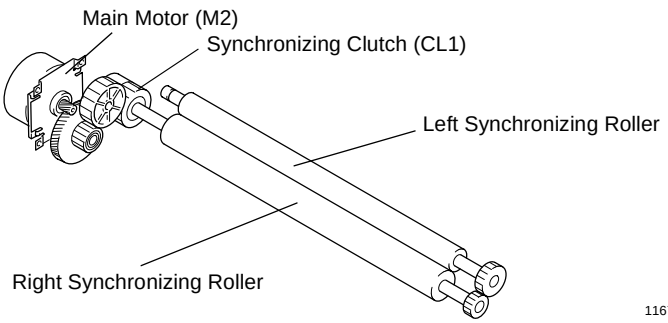
- The Synchronizing Rollers of this copier are located inside the Right Door. They are easily accessible for misfeed clearing by just opening the Right Door.



1171SBM1501A

15-1. Synchronizing Roller Drive Mechanism/Control

- The Synchronizing Rollers are turned by the drive from the Main Motor transmitted to the Synchronizing Clutch.
- The rollers are started when the Synchronizing Clutch is deenergized.

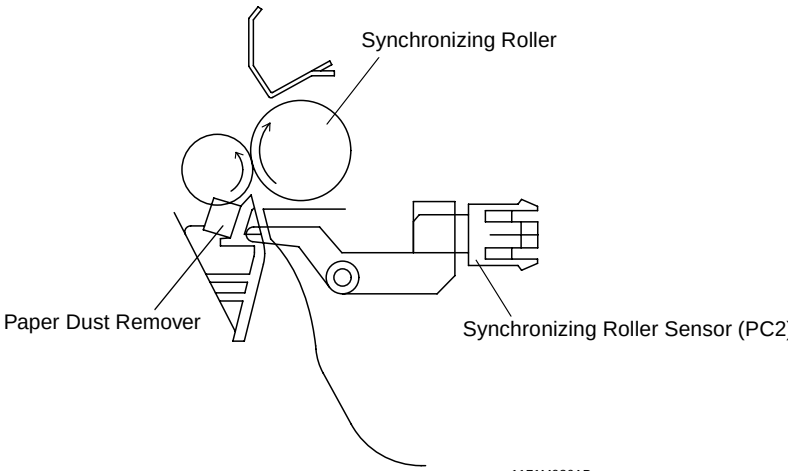


Electrical Component	Control Signal	ON	OFF
M2	PJ16A-1	L	H
CL1	PJ13A-2A	L	H

1171SBM1502A

15-2. Paper Dust Remover

- The Paper Dust Remover is installed so that it makes contact with the Left Synchronizing Roller. It is intended for preventing paper dust from sticking to the surface of the PC Drum.
- As the roller turns in contact with the Paper Dust Remover, triboelectric charging occurs, which attracts paper dust from the paper that passes between the two rollers and the dust is, in turn, transferred onto the Paper Dust Remover.



1171SBM1600A

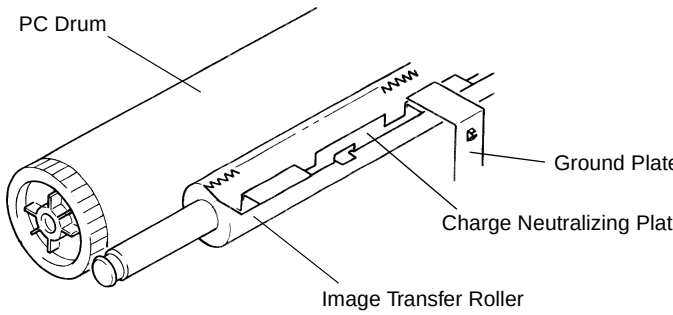
16 IMAGE TRANSFER AND PAPER SEPARATION

Image Transfer

- This copier employs an Image Transfer Roller to transfer the image to the paper. The High Voltage Unit applies an image transfer current to this roller. To ensure that image transfer efficiency is stabilized, the image transfer current is automatically varied according to the paper size, paper type, and the B/W ratio of the original.
- To prevent toner from sticking to the Image Transfer Roller, an image transfer voltage of -975V is applied to the roller for cleaning.

Paper Separation

- To neutralize any charge left on the paper, to which the image has been transferred, the High Voltage Unit applies a voltage of -1200V via a ground plate to the Charge Neutralizing Plate.



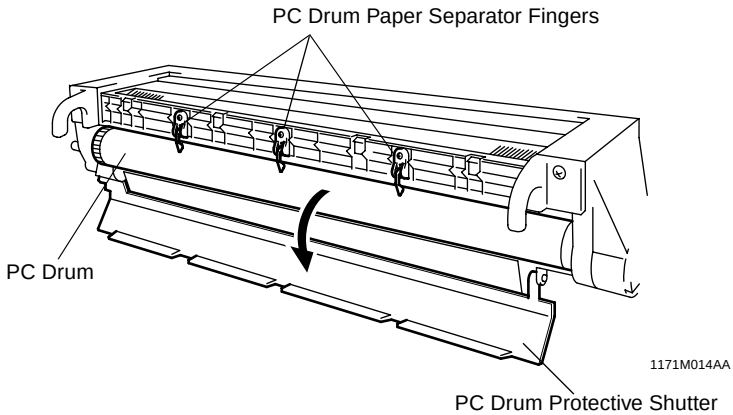
1167M082AA

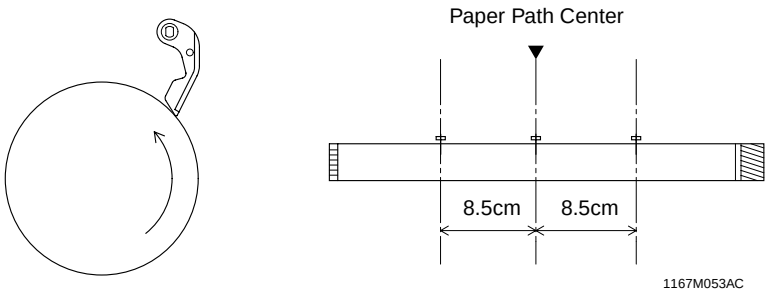
Electrical Component	Control Signal	ON	OFF
Image transfer output	PJ14A-2A	L	H

1171SBM1700A

17 PC DRUM PAPER SEPARATOR FINGERS

- The three PC Drum Paper Separator Fingers fitted to the I/C mechanically separate paper from the surface of the PC Drum to ensure good and positive paper separation.

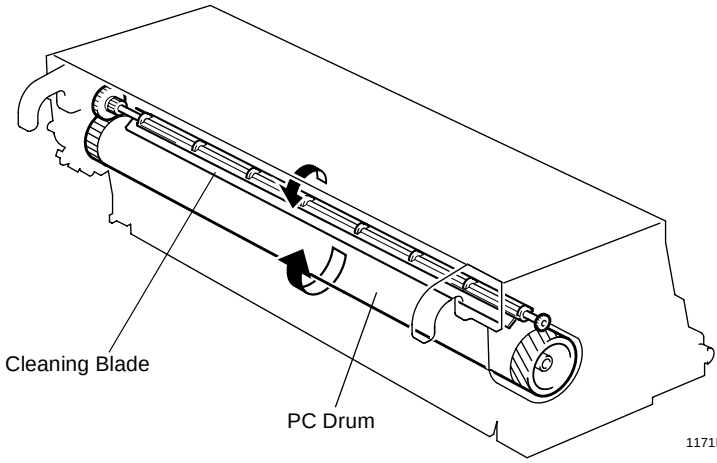




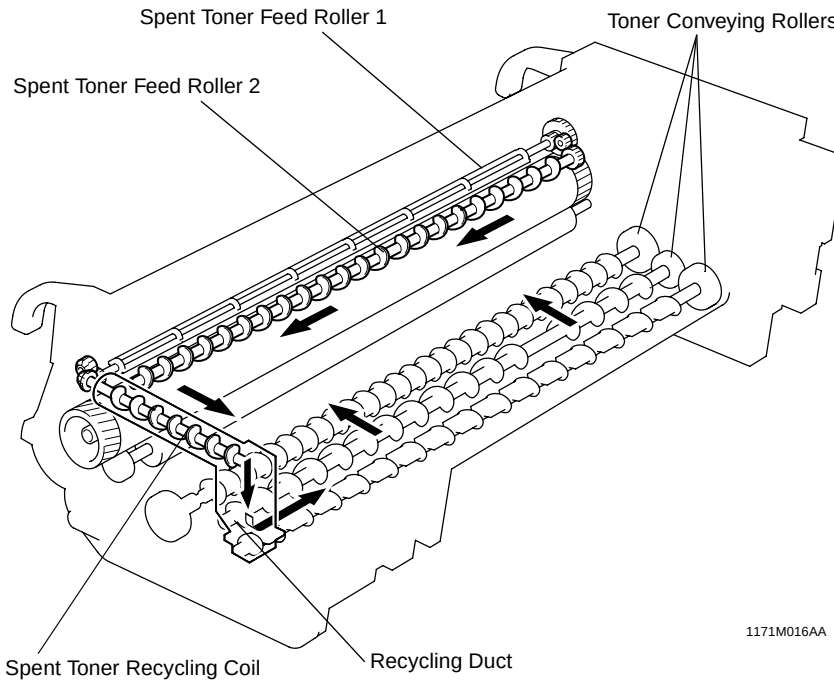
1171SBM1800A

18 PC DRUM CLEANING

- This copier employs a spent toner recycling mechanism. The Cleaning Blade which is held pressed against the surface of the PC Drum scrapes residual toner off the surface. The waste toner is conveyed by Spent Toner Feed Roller 1 and 2 to the Spent Toner Recycling Duct and eventually back to the Developer Mixing Chamber.



1171M015AA

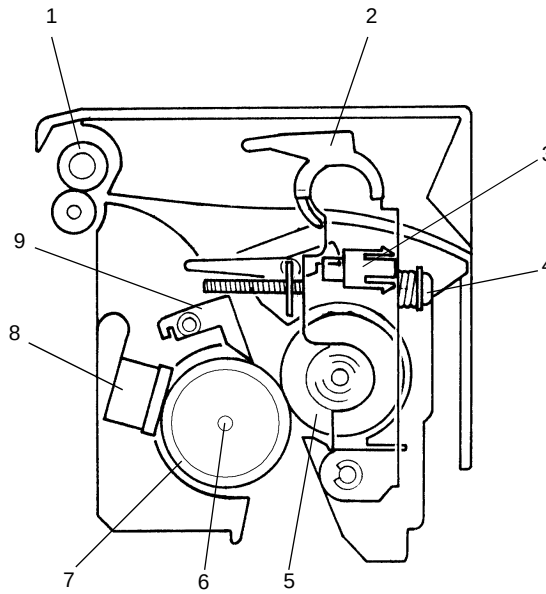


1171M016AA

1171SBM1900A

19 FUSING UNIT

- The paper, to which the developed image is yet to be fixed, is fed through heated Left and Right Fusing Rollers. The heat and pressure applied at this time fixes the image permanently to the paper.



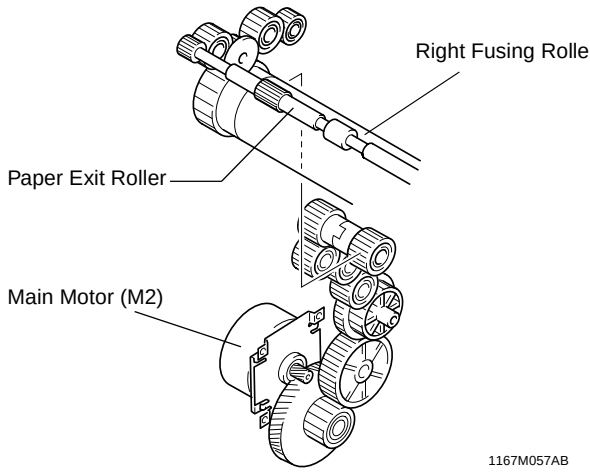
1167M078AB

1. Paper Exit Roller
2. Fusing Misfeed Clearing Lever
3. Paper Exit Sensor (PC3)
4. Pressure Spring
5. Right Fusing Roller
6. Fusing Roller Heater Lamp (H1)
7. Left Fusing Roller
8. Fusing Roller Thermostat (TS1)
9. Fusing Paper Separator Finger

1171SBM1901A

19-1. Drive Mechanism

- Drive from the Main Motor is transmitted via a gear train to the Right Fusing Roller.

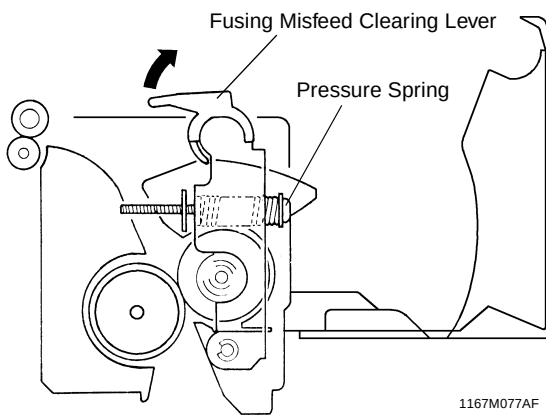


Electrical Component	Control Signal	ON	OFF
M2	PJ16A-1	L	H

1171SBM1902A

19-2. Fusing Rollers Pressure Mechanism

- To ensure that there is a certain width of area of contact between the Left and Right Fusing Rollers, pressure springs are installed.
- The rollers are held pressed against each other at all times and they are released only when servicing the copier or replacing parts.
- The pressure between the two rollers is approx. 17 kg.
- The rollers can be released by moving the Fusing Misfeed Clearing Lever in the direction of the arrow.

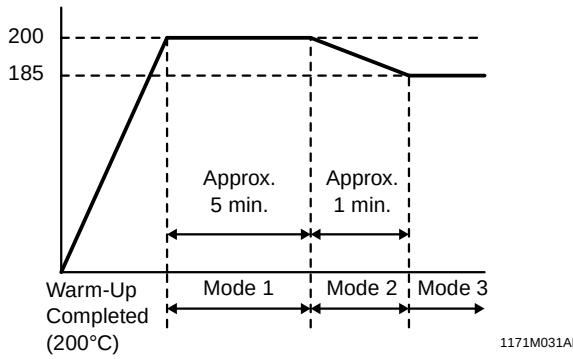


1171SBM1903A

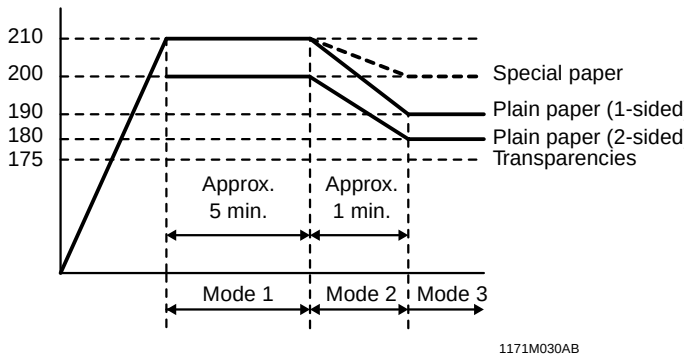
19-3. Fusing Temperature Control

- The Fusing Roller Heater Lamp inside the Left Fusing Roller provides the following temperature control.

- Temperature Control During Standby State -



- Temperature Control During a Copy Cycle -



<Temperature Control>

- The Fusing Roller Thermistor detects the surface temperature of the Left Fusing Roller. It provides an analog voltage input to the Master Board allowing the copier to control the fusing temperature.

Electrical Component	Control Signal	ON	OFF
H1	PJ16A-8	L	H

Electrical Component	Control Signal	Low Temp. ↔ High Temp.
TH1	PJ16A-5	Analog input

<Temperature Control by Mode>

- The mode that is initiated following the completion of a warm-up cycle varies as detailed below depending on the machine condition and the Fusing Roller temperature at the restart of temperature control.

Machine Condition	Fusing Roller Temperature	
	Less than 100°C	100°C or higher
Power is turned ON.	Mode 1	Mode 2
Temperature control is interrupted during warm-up.		Mode 1
Temperature control is interrupted during mode 1.		
Temperature control is interrupted during mode 2.		Mode 2
Temperature control is interrupted during mode 3.		

1171SBM1904A

19-4. CPM Control

- As a measure to prevent the temperature on the edges of the Fusing Rollers (over which no part of paper passes) from rising in a multi-copy cycle using small size paper (width of 250 mm or less), the paper feed interval is made greater.

<Control>

- If a sheet of small size paper is taken up and fed in during mode 1, control is switched to mode 2.
- The number of sheets of small size paper that are fed through is counted.

<Timing>

- The counter reaches 30.
- The plain/special paper counter reaches N specified below:
  If the control is in mode 1 or mode 2 when the counter starts counting, N = 30.
  If the control is in mode 3 when the counter starts counting, N = 100.

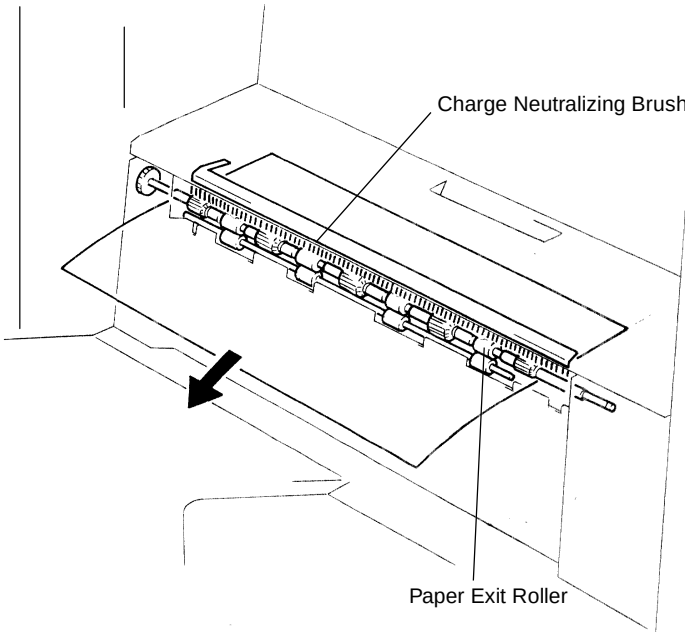
<Resetting>

- If a period of 2 min. or more elapses, during which the counter does not count up after the counter has started counting, the counter is cleared resetting the CPM control.

1171SBM2000A

20 PAPER EXIT UNIT

- The Paper Exit Roller feeds the paper, to which the developed image has been fixed, out of the copier. The Charge Neutralizing Brush touches the surface of the sheet of paper being fed out of the Fusing Unit to neutralize any static charge left on it. This effectively prevents two sheets of paper fed out of the copier from sticking to each other due to static charge.

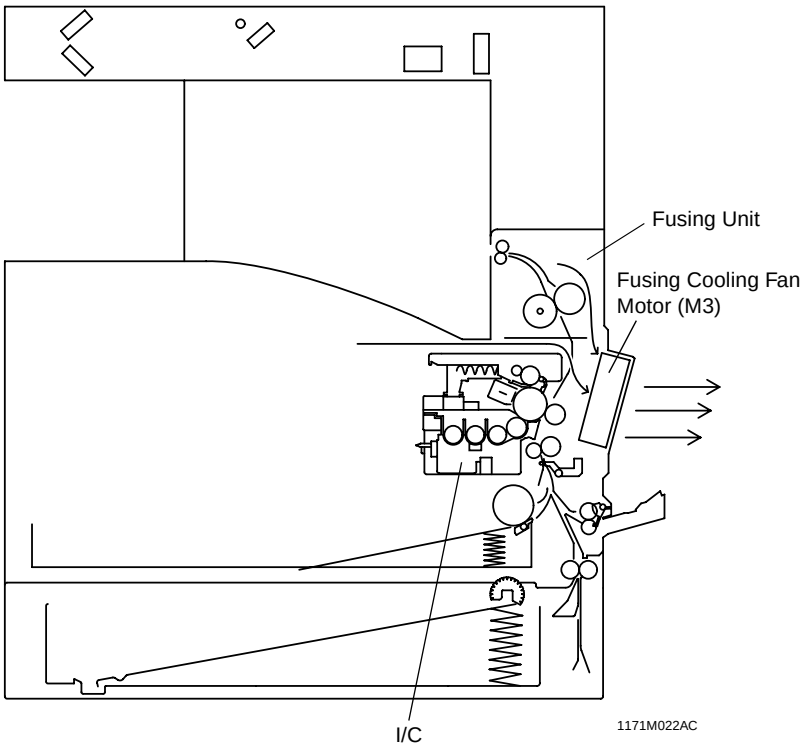


1167M061AC

1171SBM2100A

21 FUSING COOLING FAN MOTOR

- The Fusing Cooling Fan Motor located in the Right Door prevents the temperature of the Fusing Unit Cover and the area above the I/C from rising inordinately. The motor also draws the paper after it has been separated from the PC Drum onto the transport guide to ensure that it is stably and smoothly fed into the Fusing Unit.

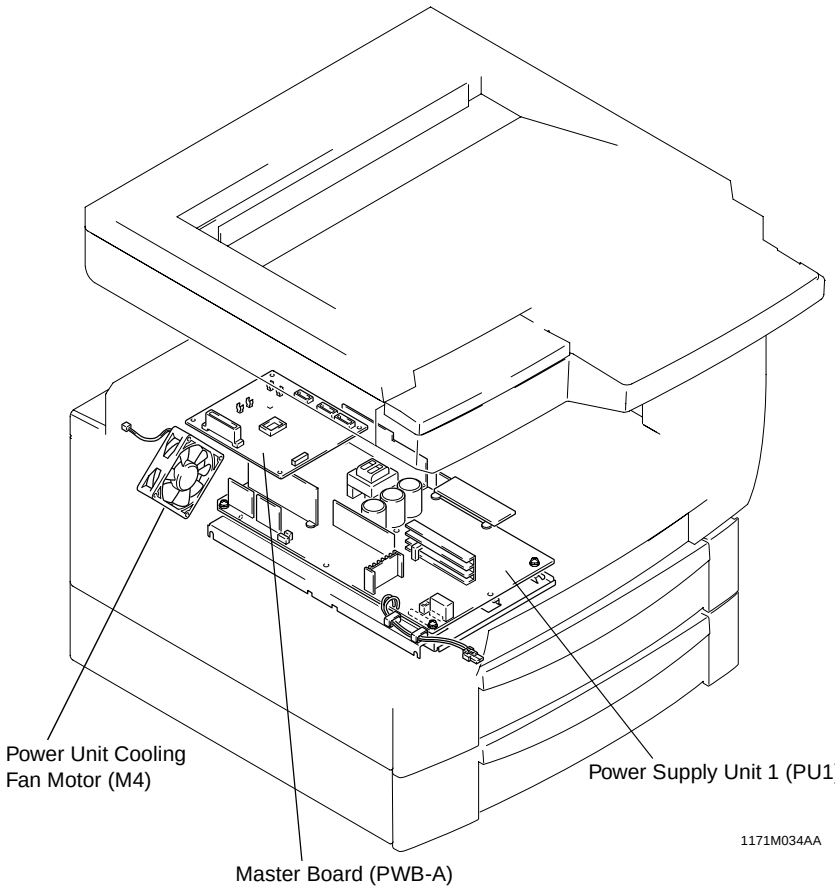


Electrical Component	Control Signal	During Copy Cycle	In Standby	During Warm-Up
		Full speed	Half speed	Stop
M3	PJ13A-3A	Pulse output		L

1171SBM2200A

22 POWER UNIT COOLING FAN MOTOR

- The Power Unit Cooling Fan Motor prevents the temperature at the Power Supply Unit and the Polygon Motor in the PH from rising inordinately.



Electrical Component	Control Signal	While Main Motor is Turning	In Standby
		Full speed	Half speed
M4	PJ6A-2	DC24V	DC10V

Di350

SWITCHES ON PWBs, TECH. REP. SETTINGS

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1 PRECAUTIONS FOR HANDLING THE PWBs

1-1. Precautions for Transportation and Storage

- Before transporting or storing the PWBs, put them in protective conductive cases or bags so that they are not subjected to high temperature and are not exposed to direct sunlight.
- Protect the PWBs from any external force so that they are not bent or damaged.
- Once the PWB has been removed from its conductive case or bag, never place it directly on an object that is easily charged with static electricity (such as a carpet or plastic bag).
- Do not touch the parts and printed patterns on the PWBs with bare hands.

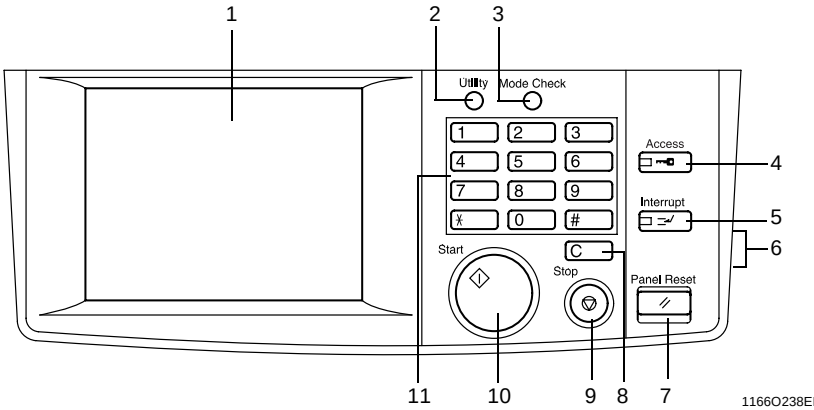
1-2. Precautions for Replacement and Inspection

- Whenever replacing the PWB, make sure that the power cord of the copier has been unplugged.
- When the power is on, the connectors should never be plugged in or unplugged.
- Use care not to strap the pins of an IC with a metal tool.
- When touching the PWB, wear a wrist strap and connect its cord to a securely grounded place whenever possible. If you cannot wear a wrist strap, touch the metal part to discharge static electricity before touching the PWB.

2 CONTROL PANEL KEYS AND TOUCH PANEL

✻ For more details, see the Operator's Manual shipped with the copier.

2-1. Control Panel Keys



1. Touch Panel
- Shows various screens and messages.

2. Utility Key
- Press to show the User Mode menu.

3. Mode Check Key
- Shows the Mode Check screen on which the user can check the current copying settings.

4. Access Mode Key
- Used to enter the access number. After the access number has been entered, pressing this key will allow the user to make copies.

5. Interrupt Key
- Sets the copier into, or lets it leave, the Interrupt mode.

6. Display Contrast Knob
- Turn to vary the brightness of the Touch Panel.

7. Panel Reset Key
- Clears all settings made on the control panel, setting the copier back into the initial mode.
- Cancels currently reserved jobs.

✻ It does not clear the zoom ratios and job settings stored in memory and Interrupt mode.

8. Clear Key
- Clears the number-of-copies setting, zoom ratio, and counter count.
- Cancels the image data read.

9. Stop Key
- Press to stop a scanning cycle.
- Press to stop a print cycle.

10. Start Key
- Press to start the document scanning sequence.
- Press to start a print cycle.

11. 10-key Pad
- Numeric key pad used for entering the number of copies to be made, zoom ratio, access number, and the Tech. Rep. mode settings.

2-2. Explanation of the Touch Panel

(1) Basic Screen

- The Basic screen is the initial screen that appears when the copier panel is reset or auto reset is activated.

1168P169CC

1. Supplementary Function Key
- Selects the corresponding menu screen, either Auxiliary, Density, Orig. ▶ Copy, or Basics.

2. Message Display
- Shows the current copier status, operating instructions, caution/warning messages, and other data including the number of copies selected.

3. Basic Function Keys
- Allows the user to select the finishing, zoom ratio, and copy paper.

4. Function Display
- Shows graphic representations of the settings currently made for Orig. ▶ Copy and Finishing.

5. Status Display
- Shows what is being done with the current job and other data.

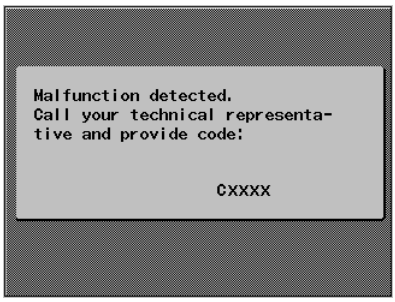
(2) Warning Screens

- The warning screen may be a malfunction display, error display, warning display, or a caution display.

<Malfunction Display>

- A malfunction display is given when trouble occurs which cannot be corrected by the user.

Example: Malfunctions that can be identified with a specific code.

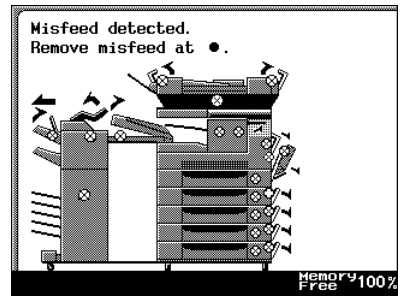


1171S001CB

<Error Display>

- An error display is given when trouble occurs which can be corrected by the user.

Example: Paper misfeed, toner empty, door open.

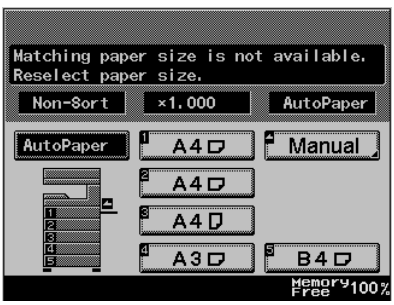


1168P167CD

<Warning Display>

- A warning display is given when any further copier operation will not be possible, or only a defective copy will be produced, because of erroneous or illegal panel settings or other cause.

Example: Unmatched paper size in Auto Paper.



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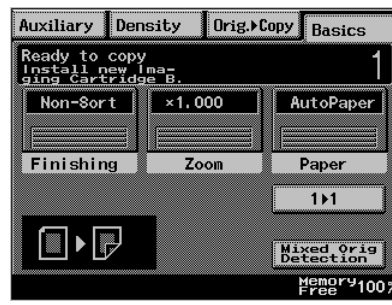
<Caution Display>

- A caution display is given when, though further copier operation will be possible, it could result in a malfunction.

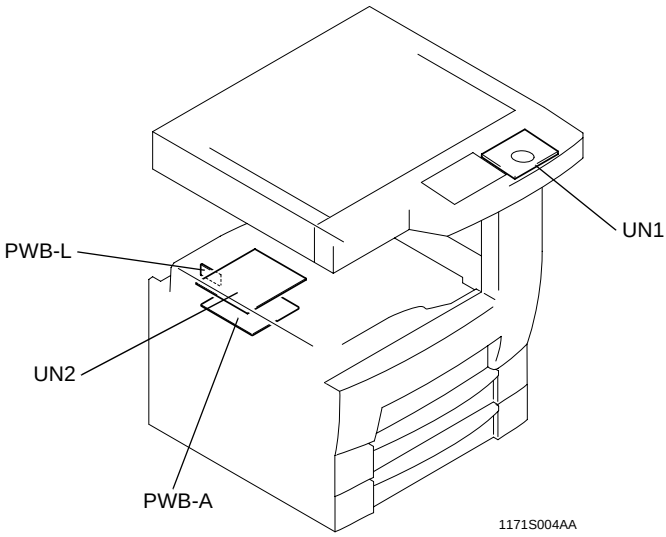
Example: Install new Imaging Cartridge.



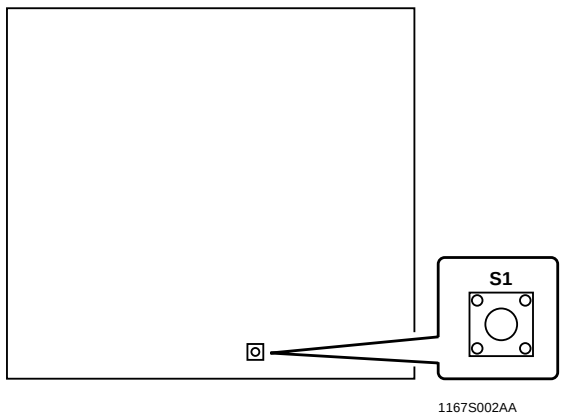
1171S003CB

3 FUNCTION OF SWITCHES AND OTHER PARTS ON PWBs

3-1. PWB Location

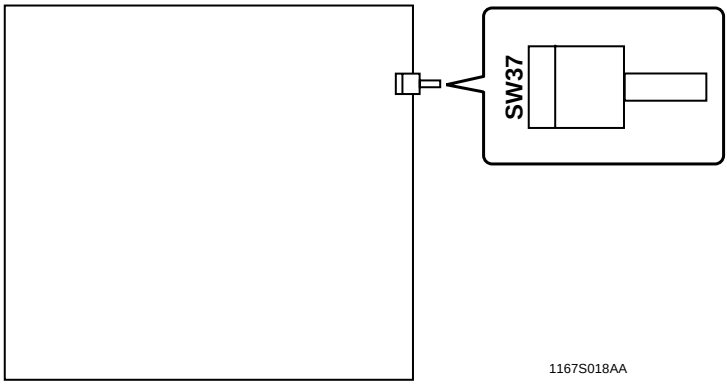


3-2. PWB-A (Master Board)



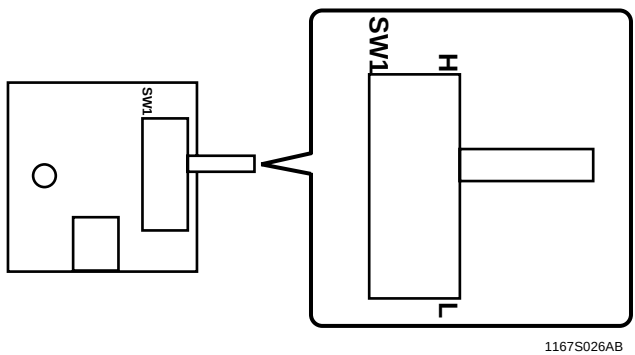
Symbol	Name	Description
S1	Test Print Switch	Used to run a test print cycle.

3-3. UN1 (Control Panel)



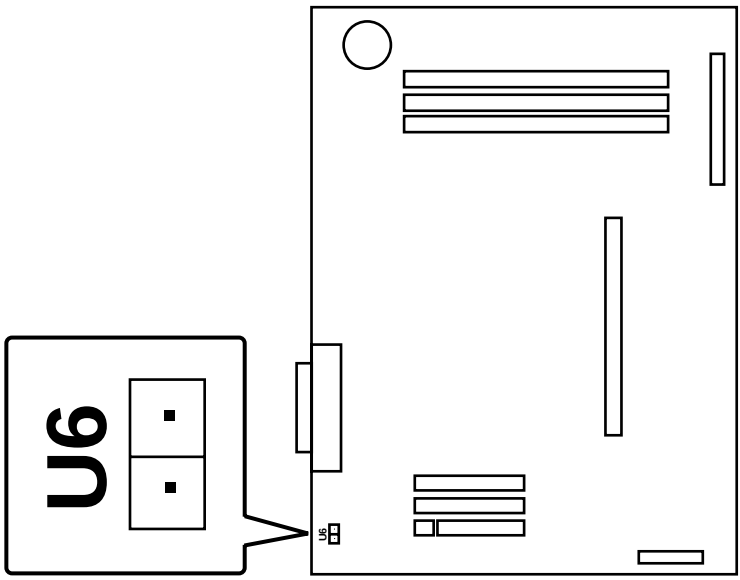
Symbol	Name	Description
SW37	Warm Restart Switch	• Used to enter the initial mode. • Used to restart the copier after a breakdown.

3-4. PWB-L (PPM Switching Board)



Symbol	Name	Description
S1	Low-Speed Mode Selecting Switch	Used to make longer the paper-to-paper intervals as a means of preventing the problem in which sheets of paper are fed out untidily when large size paper left to stand under high humidity condition is being used. ✻ Keep this switch in the H position, as it is only for special users.

3-5. UN2 (MFB Board)



1167S027AA

Symbol	Name	Description
U6	Forced Memory Clear	Used when it is not possible to clear RAM by warm restart.

✻ Be careful about using these pins, as closing these pins clears all data including counter data.

<Clearing Procedure>

1. Turn OFF the Power Switch.
2. Remove the Upper Cover and MFB Box Cover.
3. Close U6 and, in that condition, turn ON the Power Switch.

NOTE

Use care not to close any other circuit.

4. When the initial screen appears, turn the Power Switch OFF.
5. Open U6.

NOTE

When Forced RAM Clear has been performed, make these adjustments and settings once again in this order:

1. "Marketing Area" of "Initial mode"
2. "Memory Clear" of "Initial mode"
3. Other adjustments and settings as necessary

<Data/Conditions Cleared by Reset Switches/Pins>

Switches/Pins / Data/Conditions Cleared	Power Switch OFF/ON	Side Cover open/ close	Initial Mode			Forced RAM Clear
			Memory Clear	Total Clear	Trouble Reset	
Misfeed display	❍	❍	❍	—	❍	❍
Malfunction display (other than Fusing)	❍	❍	❍	—	—	❍
Malfunction display (all including Fusing)	—	—	❍	—	❍	❍
Erratic operation/ display	—	—	❍	—	❍	❍
User's Choice	—	—	❍	—	—	❍
Tech. Rep. Mode	—	—	❍	—	—	❍
Counter	—	—	—	❍	—	❍
RD Mode	—	—	—	❍	—	❍
Security Mode	—	—	❍	—	—	❍
Adjust Mode	—	—	—	—	—	❍

❍: Cleared (initialized) —: Not cleared

4 USER'S CHOICE MODE

- The User's Choice mode is used to make various settings according to the user's needs.

4-1. User's Choice Selection Screen

1167S009CB

4-2. User's Choice Function Setting Procedure

<Setting Procedure>

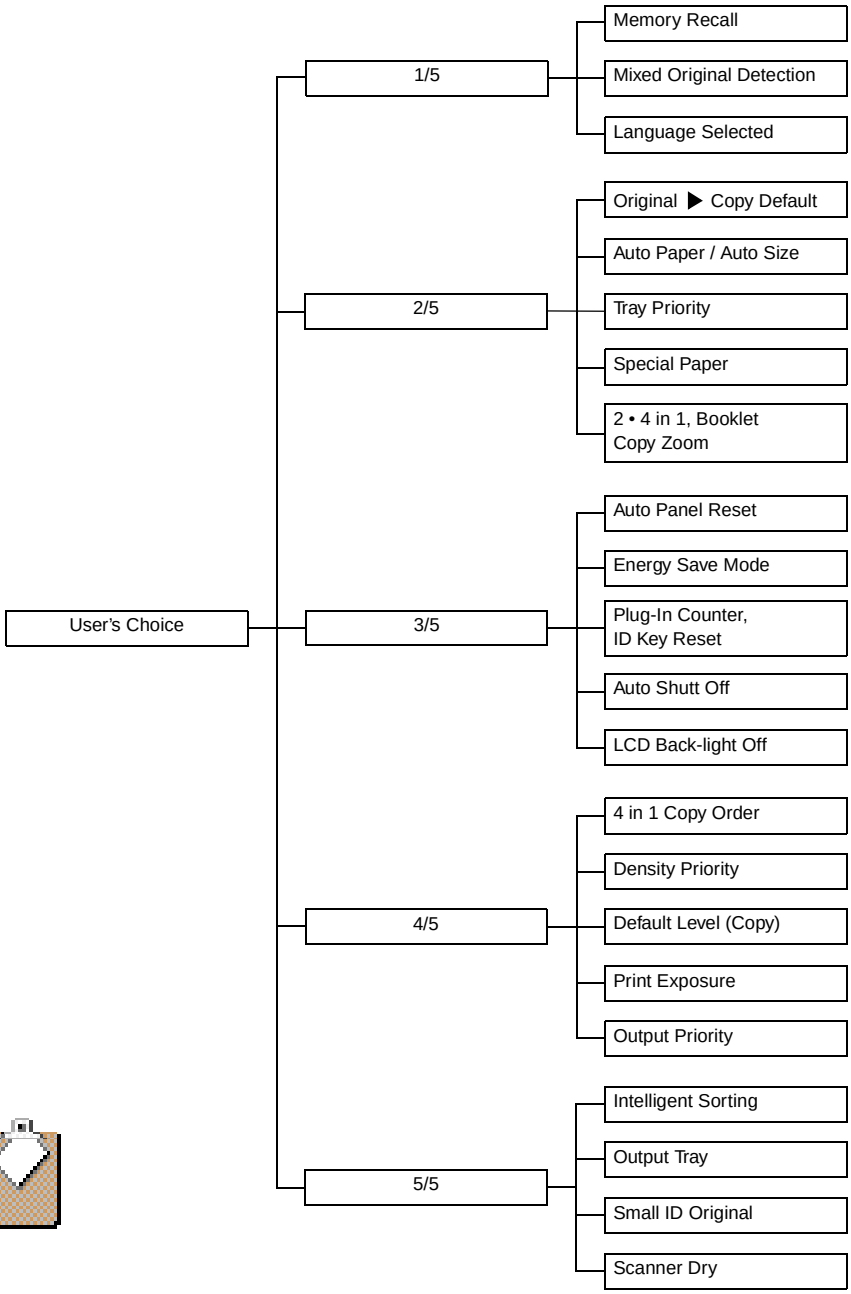
1. Press the Utility key on the control panel and then touch the "User's Choice" key.
2. Select the page number key that contains the desired function from among 1/5 through 5/5 shown at the bottom of the Touch Panel.
3. Select the function to be set and make settings as required.
4. After the settings are complete, touch the "Enter" key to validate the settings.

✻ The function selected is highlighted.

<Exiting the Mode>

- Touch [Exit] on the screen to go back to the Basic screen.

4-3. User's Choice Function Tree

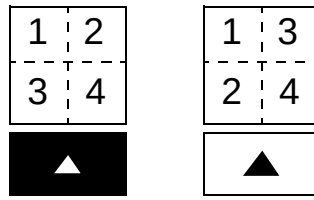


4-4. Settings in the User's Choice Mode

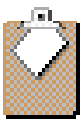
<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Memory Recall</td><td>Select whether to enable (“ON”) or disable (“OFF”) the function that retains the image data even after the last copy paper has been fed out, allowing the user to recall the same image data.
<table><tr><td>ON</td><td>OFF</td></tr></table></td></tr>
<tr><td>Mixed Original Detection</td><td>Select whether to let the system select by default (“ON”) the Mixed Original Detection mode or not (“OFF”) when power is turned ON or the Panel Reset key pressed.
<table><tr><td>ON</td><td>OFF</td></tr></table></td></tr>
<tr><td>Language Selected</td><td>Select the language of the Touch Panel messages.
<table><tr><td><Metric Areas></td><td></td><td></td></tr><tr><td>ENGLISH</td><td>GERMAN</td><td>FRENCH</td></tr><tr><td>DUTCH</td><td>ITALIAN</td><td>SPANISH</td></tr><tr><td>PORTUGUESE</td><td>DANISH</td><td>NORWEGIAN</td></tr><tr><td>SWEDISH</td><td>FINISH</td><td>JAPANESE</td></tr></table><table><tr><td><Inch Areas></td><td></td><td></td></tr><tr><td>ENGLISH</td><td>FRENCH</td><td>SPANISH</td></tr><tr><td>JAPANESE</td><td></td><td></td></tr></table></td></tr>
</table>

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Original ▶ Copy Default</td><td>Select the type of Original ▶ Copy setting selected automatically when the copier is turned ON or Panel Reset key pressed. If “Duplex only” is selected for “Simplex/Duplex” of the “Tech. Rep. Choice” function, 1 ▶ 1 is not displayed.
<1-Sided ▶ 2-Sided>
<table><tr><td>1-Sided ▶
2-Sided</td><td>2-Sided ▶
2-Sided</td><td>1-Sided ▶
1-Sided</td></tr></table>
<1-Sided ▶ 2-Sided>
<table><tr><td>1-Sided ▶
2-Sided</td><td>2-Sided ▶
2-Sided</td></tr></table></td></tr>
<tr><td>Auto Paper/ Auto Size</td><td>Specify the default mode selected automatically when power is turned ON or the Panel Reset key pressed.
<table><tr><td>Auto Paper</td><td>Auto Size</td><td>Manual</td></tr></table></td></tr>
<tr><td>Tray Priority</td><td>Specify the paper source selected automatically.
<table><tr><td>1st Drawer</td></tr><tr><td>2nd Drawer</td></tr><tr><td>3rd Drawer</td></tr><tr><td>4th Drawer</td></tr><tr><td>5th Drawer</td></tr><tr><td>LCT</td></tr></table>✻ Manual Bypass Tray is not selectable.</td></tr>
<tr><td>Special Paper</td><td>Set up a drawer for special paper loading.
<table><tr><td>Normal</td><td>Not for 2-Sided</td></tr><tr><td>Recycled</td><td>Special</td></tr></table></td></tr>
<tr><td>2 • 4 in 1, Booklet Copy Zoom</td><td>Select whether to enable (“ON”) or disable (“OFF”) recalling a default zoom ratio for 2in1, 4in1, or Booklet Creation.
<table><tr><td>ON</td><td>OFF</td></tr></table>The default zoom ratios are as follows when “ON” has been selected.
< Metric Areas >
<table><tr><td>× 0.500 4in1</td></tr><tr><td>× 0.707 2in1/Booklet</td></tr><tr><td>× 1.414 Separation</td></tr></table>
< Inch Areas >
<table><tr><td>× 0.500 4in1</td></tr><tr><td>× 0.647 2in1/Booklet</td></tr><tr><td>× 1.545 Separation</td></tr></table></td></tr>
</table>

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Auto Panel Reset</td><td>Specify the default exposure mode selected automatically when power is turned ON or the Panel Reset key pressed.
<table>
<tr><td>30 seconds</td><td>1 min</td><td>2 min</td></tr>
<tr><td>3 min</td><td>5 min</td><td>No Reset</td></tr>
</table></td></tr>
<tr><td>Energy Save Mode</td><td>Set the time it takes the copier to enter the Energy Saver mode after a copy cycle has been completed or the last key operated. Use the 10-key Pad to set the time (15 to 240 min.).
<table>
<tr><td>(15 to 240) (15 min)</td></tr>
</table></td></tr>
<tr><td>Plug-In Counter, ID key Reset</td><td>Select whether to reset (“ON”) the panel or not (“OFF”) automatically when the Access Mode key is pressed or the Key Counter is unplugged.
<table>
<tr><td>ON</td><td>OFF</td></tr>
</table></td></tr>
<tr><td>Auto Shut Off</td><td>Select whether to turn ON or OFF the Auto Shut Off function that shuts down the copier a given period of time after a copy cycle has been completed or the last key operated. Selecting “ON” means setting the time it takes the Auto Shut Off function to be activated, that can range from 15 min. to 240 min.
<table>
<tr><td>No Reset</td><td>(15 to 240) (60 min)</td></tr>
</table>
✻ The option of “No Reset” becomes available on the screen if “Yes” is selected for “Disable Sleep” of Utility - Admin. Management - Administrator Set.</td></tr>
<tr><td>LCD Back-light Off</td><td>Set the time it takes the LCD backlight to turn OFF after a copy cycle has been completed or the last key has been operated.
<table>
<tr><td>(1 to 240) (1 min)</td></tr>
</table></td></tr>
</table>

Touch Panel Display	Setting (The default is **Highlighted**).
4 in 1 Copy Order	Specify the default copying order in the 4in1 mode. 
Density Priority	Specify the default exposure mode selected automatically when power is turned ON or the panel Reset key pressed. <Density> **Auto** / Manual ✻ "Photo" of "Original Image Type" cannot be selected when "Auto" is selected. <Original Image Type> **Text** / Photo / Text/Photo
Default Level (Copy)	Auto: Select the default exposure level in the Auto Exposure mode. Manual: Set the default exposure level in the Manual Exposure mode. <Auto> Lighter / **Normal** / Darker <Manual> Lighter ... Darker ✻ EXP. 1 (Lighter) to EXP. 9 (Darker)
Print Exposure	Set the image density level for printing. -2 / -1 / **0** / 1 / 2
Output Priority	Select the default finishing type when the copier is equipped with a Sorter or Staple Sorter. **Non-Sort** / Sort / Group + Staple ✻ Staple can be combined with either Sort or Group. Hole Punch ✻ Hole Punch can be combined with any one of the functions.

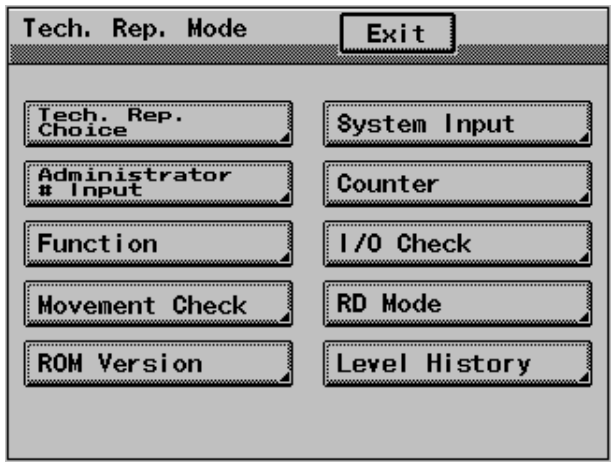
<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Intelligent Sorting</td><td>When the system is equipped with a finishing option and the ADF is being used, select whether to turn “ON” or “OFF” the function that automatically switches between Sort and Non-Sort according to the number of originals loaded in the ADF.
<table><tr><td>ON</td><td>OFF</td></tr></table></td></tr>
<tr><td>Output Tray</td><td>Select the output tray for each application when the system is equipped with a Job Tray or Finisher.
<Printer>
• Job Tray
<table><tr><td>1</td><td>2</td></tr></table>• Finisher
<table><tr><td>1</td><td>2</td></tr></table><Copier>
<table><tr><td>1</td><td>2</td></tr></table>✻ 1: 1st tray; 2: 2nd tray
✻ When the system is equipped with a Finisher, the option of “Copier” and the tray designation keys “1” and “2” are not displayed.</td></tr>
<tr><td>Small ID Original</td><td>Select whether to enable (“ON”) a copy cycle or not (“OFF”) when it is initiated with no original placed on the Original Glass or with an original of a small size that is not detectable by the system (smaller than A5) placed on the Original Glass.
<table><tr><td>ON</td><td>OFF</td></tr><tr><td>The copy cycle is run using the paper loaded in the default paper source.</td><td>A warning message is given and the copier inhibits the start of this copy cycle.</td></tr></table></td></tr>
<tr><td>Scanner Dry</td><td>Set the time-of-day to run a Scanner drying cycle.
<table><tr><td>Hours</td><td>Minutes</td></tr><tr><td>00 ~ 23</td><td>00 ~ 59</td></tr></table>✻ When entering a value for Hours and Minutes and if it is a one-digit number, first enter a “0.”</td></tr>
</table>



5 TECH. REP. MODE

- This mode is used by the Tech. Rep. to set, check, adjust, and/or program various service functions.

5-1. Tech. Rep. Mode Menu Screen



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5-2. Tech. Rep. Mode Function Setting Procedure

<Setting Procedure>

1. Set the copier into the Tech. Rep. mode by the following method:

- With the “Meter Count” screen opened from the Utility menu screen, press the following keys in this order:

Stop Key	➡	0	➡	0	➡	Stop Key	➡	0	➡	1

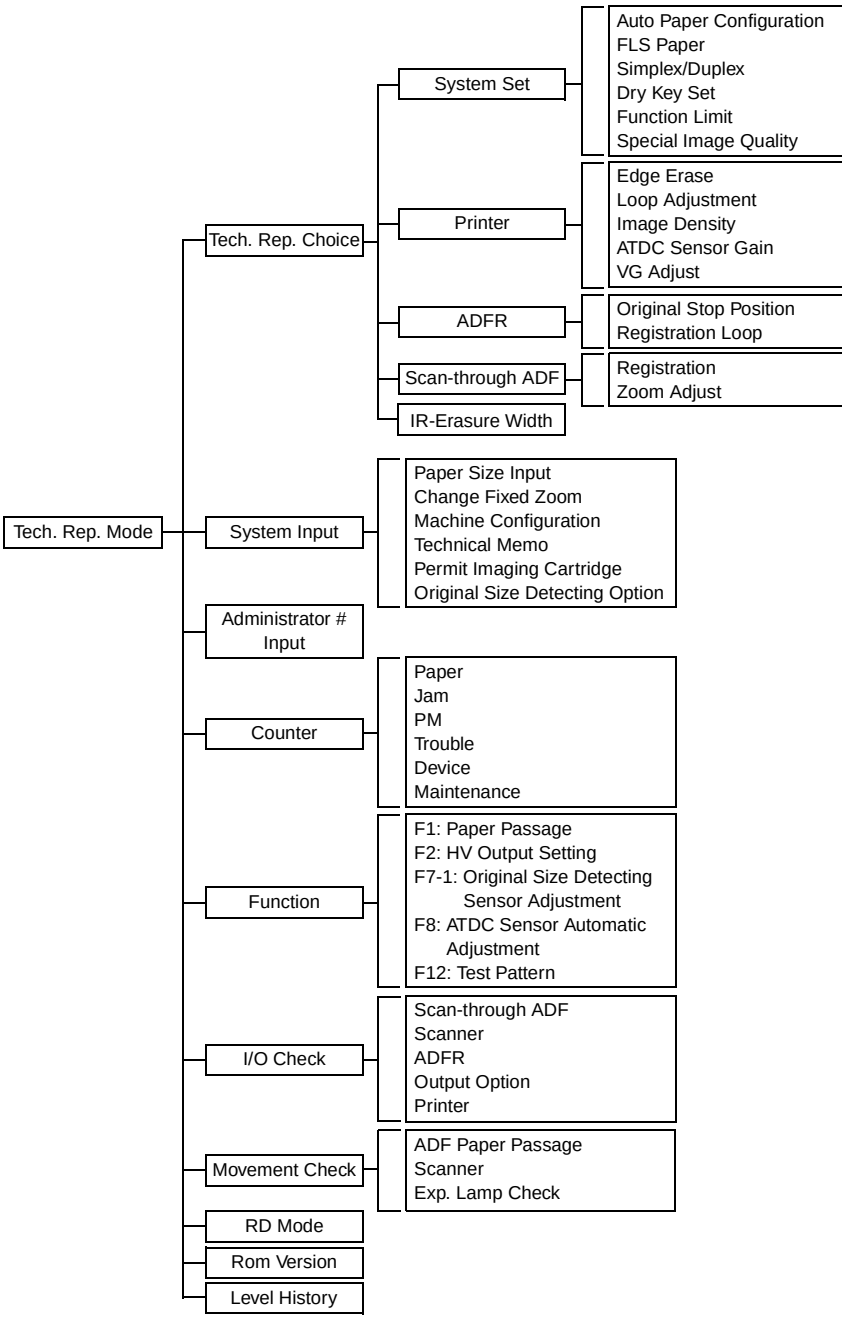
2. Select the particular Tech. Rep. mode function to be set.
3. Make the necessary settings according to the function selected.

✻ The function selected is highlighted.

<Exiting the Mode>

- Touch [Exit] on the screen to go back to the Basic screen.

5-3. Tech. Rep. Mode Setting Tree



5-4. Settings in the Tech. Rep. Mode

(1) Tech. Rep. Choice

- This function allows the Tech. Rep. to make the various settings and adjustments.

<Function>
1. System Set
2. Printer
3. ADFR
4. Scan-through ADF

<Setting Procedure>
1. Touch [Tech. Rep. Choice] to open a screen to Tech. Rep. Choice.
2. Touch the desired major category key.
3. Touch the desired sub-category key.

Tech. Rep. Mode ▶ Tech. Rep. Choice

<System Set>

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Auto Paper Configuration</td><td><Metric Areas>
Select either “Inch/Metric” or “Metric” for rounding off the original size detected.
<table>
<tr><td>Inch / Metric</td><td>The measurement is rounded to the nearest standard inch or metric size.</td></tr>
<tr><td>Metric</td><td>The measurement is rounded to the nearest standard metric size.</td></tr>
</table>
<Inch Areas>
Select either “Inch/Metric” or “Inch” for rounding off the original size detected.
<table>
<tr><td>Inch / Metric</td><td>The measurement is rounded to the nearest standard inch or metric size.</td></tr>
<tr><td>Inch</td><td>The measurement is rounded to the nearest standard inch size.</td></tr>
</table></td></tr>
<tr><td>FLS Paper</td><td>Set the size for FLS.
<table>
<tr><td>F: 330 mm
C: 203 mm</td><td>F: 330mm
C: 210mm</td><td>F: 330 mm
C: 216 mm</td><td>F: 330 mm
C: 220 mm</td></tr>
</table></td></tr>
<tr><td>Simplex/Duplex</td><td>Select whether or not to enable the setting of 1-Sided ▶ 1-Sided under Original ▶ Copy Default available from User’s Choice.
✻ If “Simplex & Duplex” is selected, 1-Sided ▶ 1-Sided becomes available as an option.
<table>
<tr><td>Display</td><td>Simplex & Duplex</td><td>Duplex Only</td></tr>
<tr><td>Description</td><td>Does not limit the options for Original ▶ Copy Default to 2-sided copying only.</td><td>Limits the options for Original ▶ Copy Default to 2-sided copying only.</td></tr>
</table></td></tr>
</table>

Tech. Rep. Mode ▶ Tech. Rep. Choice

Touch Panel Display	Setting (The default is **Highlighted**).
Dry Key Set	Select whether to display the Dry key for "User Management" of Utility. If the key is to be displayed, select whether to dry only the Scanner or both Scanner and Drum. Scanner / Scanner & Drum / **Disable**
Function Limit	Select whether to limit ("ON") the functions to be set on the control panel or not ("OFF"). ON: Enables the functions other than Orig. ▶ Copy and Auxiliary. **OFF**: Enables all functions (no Limit).
Special Image Quality	Select whether to enable the selection of Special Image Quality for "Density Priority" of User's Choice (applicable on a case-by-case basis). ✻ Touching the "✻" key on the System Set menu selects or cancels this function. ✻ Key high-lighted: The Special Image Quality key is displayed. ✻ Key not high-lighted: The Special Image Quality key is not displayed.

<Printer>

Touch Panel Display	Setting (The default is **Highlighted**).
Edge Erase	Set the erase width on the leading, trailing, right, and left edge of the image. Leading / Trailing / Right/Left: 0mm ..... **4** ..... 5mm Smaller ◄——► Greater
Loop Adjustment	Set the loop length to be formed before the Synchronizing Rollers. 1st Drawer / Other Drawers / Duplex & Manual: -5mm ..... **0** ..... +5mm Smaller ◄——► Greater

Tech. Rep. Mode ▶ Tech. Rep. Choice

Touch Panel Display	Setting (The default is **Highlighted**).
Image Density	Set the image density for the printer. ✻ The value set for this function becomes the central value of “Print Exposure” of User’s Choice. -2 ..... **0** ..... +4 Lighter ◄——► Darker
ATDC Sensor Gain	Current: Shows the current ATDC control voltage. Set: Set the ATDC control voltage. ✻ If the “Set” value is to be changed, be sure to record the “Current” value. ✻ The ATDC Sensor Gain value can be converted to a voltage value using the following equation. ATDC Sensor Gain = 5.1 × 2.2 × [setting value] ÷ 256 (V) 123 ..... **155** ..... 186 T/C Greater ◄——► T/C Smaller
VG Adjust	Set VG when a fog or void occurs in the image. -2 ..... **0** ..... +2 Lighter ◄——► Darker

<ADFR>

Touch Panel Display	Setting (The default is **Highlighted**).
Original Stop Position	Set the document stop position in each of the ADFR modes. 1-Sided Set / 2-Sided Set / Single Feed Set: -7 ..... **0** ..... +7 Original Width Scale end ◄——► Original Glass end ✻ The minimum setting value is -6 only for 2-Sided Set.
Registration Loop	Set the loop length to be formed in the original before the Registration Roller of ADFR. -5mm ..... **0** ..... +5mm Smaller ◄——► Greater

Tech. Rep. Mode ▶ Tech. Rep. Choice

<Scan-through ADF>

Touch Panel Display	Setting (The default is **Highlighted**).
Registration	Adjust registration in the main and sub scanning directions of the ADF. -127 dot..... **0** ..... +127 dot Smaller ◄——► Greater
Zoom Adjust	Adjust the scanning zoom ratio in the main and sub scanning directions of the ADF. 0.990 ..... **1.000** ..... 1.010 Smaller ◄——► Greater

<IR-Erasure Width>

Touch Panel Display	Setting (The default is **Highlighted**).
IR-Erasure Width	Set the forced erasure width along the four edges of the paper to erase shadows which are otherwise produced by the Original Scales. **0mm** .....3mm Smaller ◄——► Greater

(2) System Input

- This function allows the Tech. Rep. to change the fixed zoom ratios, set the paper size, define the marketing area, configure for the Key Counter, and input the telephone number.

<Setting Procedure>
1. Touch [System Input] to open the System Input menu screen.
2. Touch the desired subfunction key.

Tech. Rep. Mode ▶ System Input

Touch Panel Display	Operation
Paper Size Input	Set the size of the paper used in each paper source. ✻ This function cannot be used for the LCC as its paper is set with its internal DIP switch. <Procedure> 1. Touch the key of the paper source for which the paper size setting is to be changed to show the Paper Size Input screen. 2. Touch the desired paper size key. ✻ If the 10-key Pad has been selected, enter the FD and CD size of the paper from the 10-Key Pad. 3. Touch [END] to validate the paper size setting.
Change Fixed Zoom	Change a fixed zoom ratio to a desired value in the range between ×0.250 and ×4.000. <Procedure> 1. Touch the key of the fixed zoom ratio to be changed. 2. Press the Clear key to clear the setting and enter the new ratio from the 10-Key Pad. 3. Touch [Input] to validate the new setting.
Machine Configuration	Displays the machine configuration status.
Technical Memo	Enter the serial number and other data.
Permit Imaging Cartridge	Select whether to permit the use of an illegal Imaging Cartridge installed. The use is enabled when [Enter] is touched after “Yes” has been selected. ✻ It is not possible to disable the use of an Imaging Cartridge once permitted. Yes / **No**
Original Size Detecting Option	Set whether the optional Original Size Detecting Sensor is available or not. ON / **OFF**

(3) Administrator # Input

- This function allows the Tech. Rep. to set the administrator number that is used to open the “Admin. Management” screen of Utility.

<Setting Procedure>
1. Touch [Administrator # Input] to open the Administrator # Input menu screen.
2. Blank out the numeric data with the Clear key and enter the desired number from the 10-Key Pad.
3. Touch [Enter] to validate the entry of the number.

Tech. Rep. Mode ▶ Administrator # Input

Touch Panel Display	Operation
Administrator # Input	Set the administrator number used to open the “Admin. Management” screen of Utility from the 10-Key Pad. (1 to 8 digits: 0 to 99999999)

(4) Counter

- This function maintains the counts of the various counters, thus aiding the Tech. Rep. in performing service jobs.

<Setting Procedure>
1. Touch [Counter] to open the Counter menu screen.
2. Touch [Check] and then the desired counter to open the detailed counter screen.
3. To clear a count, touch [Counter Reset], the key of the counter to be cleared, and [END].

✻ Two or more counters can be selected.

Tech. Rep. Mode ▶ Counter

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>Paper</td><td>Shows the number of sheets of paper used by the size and type. Each counter may be reset to 0 independently of the others:
<Paper Counter 1/2>
<table><tr><th>Display</th><th>Description</th></tr><tr><td>A3</td><td>A3L</td></tr><tr><td>B4</td><td>B4L</td></tr><tr><td>A4</td><td>A4L/C</td></tr><tr><td>B5</td><td>B5L/C</td></tr><tr><td>A5</td><td>A5L/C</td></tr><tr><td>B6</td><td>B6L</td></tr><tr><td>A6</td><td>A6L</td></tr><tr><td>11 × 17</td><td>11” × 17”L</td></tr><tr><td>11 × 14</td><td>11” × 14”</td></tr><tr><td>Letter</td><td>Letter L/C</td></tr><tr><td>Legal</td><td>Legal L/C</td></tr><tr><td>5-1/2 × 8-1/2</td><td>5-1/2” × 8-1/2” L/C</td></tr></table>
<Paper Counter 2/2>
<table><tr><th>Display</th><th>Description</th></tr><tr><td>FLS.</td><td>FLS.</td></tr><tr><td>Normal</td><td>Normal</td></tr><tr><td>Recycled</td><td>Recycled</td></tr><tr><td>Special</td><td>Special</td></tr><tr><td>Not for 2-Sided</td><td>Not for 2-Sided</td></tr></table>
<Clearing a Count>
Touch the item key whose count is to be cleared and press the Clear key. If a count is accidentally cleared, pressing the Interrupt key will undo the clear operation.</td></tr>
</table>

Tech. Rep. Mode ▶ Counter

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>Jam</td><td>Shows the number of misfeeds that have occurred in different parts of the system, together with rates of occurrence (MCBJ, MDBJ). Each counter may be reset to zero independently of the others:

<Jam Counter 1/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MCBJ System</td><td>Average no. of copies made for each paper misfeed:
MCBJ Total Counter ÷ Jam Counter (including misfeeds in Finisher)</td></tr>
<tr><td>MCBJ Machine Only</td><td>Average no. of copies made for each paper misfeed:
MCBJ Total Counter ÷ Jam Counter (excluding misfeeds in Finisher)</td></tr>
<tr><td>1st Drawer</td><td>No. of misfeeds that occurred at the 1st Drawer of the copier</td></tr>
<tr><td>2nd Drawer</td><td>No. of misfeeds that occurred at the 2nd Drawer of the copier</td></tr>
<tr><td>3rd Drawer</td><td>No. of misfeeds that occurred at the 3rd Drawer of the copier</td></tr>
<tr><td>4th Drawer</td><td>No. of misfeeds that occurred at the 4th Drawer of the copier</td></tr>
<tr><td>5th Drawer</td><td>No. of misfeeds that occurred at the 5th Drawer of the copier</td></tr>
</table>
<Jam Counter 2/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Manual Feed</td><td>No. of misfeeds that occurred at the Manual Bypass Tray</td></tr>
<tr><td>Vertical Transport</td><td>No. of misfeeds that occurred at the paper take-up/transport section of the copier</td></tr>
<tr><td>Separator</td><td>No. of misfeeds that occurred at the paper separator section of the copier</td></tr>
<tr><td>Fusing</td><td>No. of misfeeds that occurred at the Fusing Unit of the copier</td></tr>
<tr><td>Duplex Entrance</td><td>No. of misfeeds that occurred at the turnover/storage section of the copier</td></tr>
<tr><td>Duplex Feed</td><td>No. of misfeeds that occurred at the paper take-up section of the Duplex</td></tr>
<tr><td>LCC Feed</td><td>No. of misfeeds that occurred at the paper take-up section of the LCC</td></tr>
</table>
<Jam Counter 3/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>LCC Transport</td><td>No. of misfeeds that occurred in the LCC transport section</td></tr>
<tr><td>Shift/2Bin Tray Transport</td><td>No. of misfeeds that occurred in the Shift/Job Tray transport section</td></tr>
<tr><td>Shift/2Bin Tray Exit</td><td>No. of misfeeds that occurred in the Shift/Job Tray exit section</td></tr>
<tr><td>Finisher Horizontal Transport</td><td>No. of misfeeds that occurred in the Finisher horizontal transport section</td></tr>
<tr><td>Finisher Transport</td><td>No. of misfeeds that occurred in the Finisher transport section</td></tr>
<tr><td>Finisher Exit</td><td>No. of misfeeds that occurred in the Finisher exit section</td></tr>
<tr><td>Finisher Staple</td><td>No. of Finisher staple misfeeds that occurred</td></tr>
</table>
✻ 2Bin Tray = Job Tray</td></tr>
</table>

Tech. Rep. Mode ▶ Counter

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>Jam</td><td>
<Jam Counter 4/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Finisher Set Transport</td><td>No. of misfeeds that occurred in the Finisher Tray</td></tr>
<tr><td>MDBJ</td><td>Average no. of document transport sequences for each document misfeed:
ADFR Document Passage Counter ÷ ADFR Jam Counter</td></tr>
<tr><td>ADF (Scan-through ADF) Feed</td><td>No. of misfeeds that occurred at the paper take-up section of the ADF (Scan-through ADF)</td></tr>
<tr><td>ADF (Scan-through ADF) Transport</td><td>No. of misfeeds that occurred at the document transport section of the ADF (Scan-through ADF)</td></tr>
<tr><td>ADFR Reverse</td><td>No. of misfeeds that occurred at the document turnover and exit sections of the ADFR</td></tr>
<tr><td>SADF</td><td>No. of misfeeds that occurred at the SADF</td></tr>
</table>
<Jam Counter 5/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Printer</td><td>No. of misfeeds that occurred due to illegal designation of FCU2</td></tr>
<tr><td>Engine</td><td>No. of misfeeds that occurred due to communication error with engine (VD fault)</td></tr>
</table>
<Clearing a Count>
Touch the item key whose count is to be cleared and press the Clear key. If a count is accidentally cleared, pressing the Interrupt key will undo the clear operation.
</td></tr>
<tr><td>PM</td><td>
Shows the frequency of use of each of the PM parts. Each counter may be reset to 0 independently of the others:
<PM Counter 1/3>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>I/C Life</td><td>No. of revolutions of I/C</td></tr>
<tr><td>Fusing Unit</td><td>No. of times a sheet of paper is fed out</td></tr>
<tr><td>1st Drawer</td><td>No. of sheets of paper fed from the 1st Drawer</td></tr>
<tr><td>2nd Drawer</td><td>No. of sheets of paper fed from the 2nd Drawer</td></tr>
<tr><td>3rd Drawer</td><td>No. of sheets of paper fed from the 3rd Drawer</td></tr>
<tr><td>4th Drawer</td><td>No. of sheets of paper fed from the 4th Drawer</td></tr>
<tr><td>5th Drawer</td><td>No. of sheets of paper fed from the 5th Drawer</td></tr>
</table>
<PM Counter 2/3>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>LCC Parts 1</td><td>No. of sheets of paper fed from the LCC (for 200k)</td></tr>
<tr><td>LCC Parts 2</td><td>No. of sheets of paper fed from the LCC (for 300k)</td></tr>
<tr><td>Other PM Parts 1</td><td>No. of print cycles run (for 100k)</td></tr>
<tr><td>Other PM Parts 2</td><td>No. of print cycles run (for 150k)</td></tr>
<tr><td>Other PM Parts 3</td><td>No. of print cycles run (for 60k/120k)</td></tr>
<tr><td>1-Sided</td><td>No. of times a 1-sided original is fed through</td></tr>
<tr><td>2-Sided</td><td>No. of times a 2-sided original is fed through</td></tr>
</table>
</td></tr>
</table>

Tech. Rep. Mode ▶ Counter

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>PM</td><td>
<PM Counter 3/3>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>SADF
IR 1
IR 2
2 Bin Tray
Toner Pages</td><td>No. of single feeds
No. of scan motions (for 60k)
No. of scan motions (120k)
No. of cycles of feeding paper out into Job Tray
No. of pages equivalent to the no. of black dots on A4 original with B/W 5%</td></tr>
</table>
✻ 2Bin Tray = Job Tray
<Clearing a Count>
Touch the item key whose count is to be cleared and press the Clear key. If a count is accidentally cleared, pressing the Interrupt key will undo the clear operation.
✻ I/C Life cannot be cleared.
</td></tr>
<tr><td>Trouble</td><td>
Shows the number of malfunctions that have occurred in different parts of the system. Each counter may be reset to 0 independently of the others:
<Trouble Counter 1/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C0000
C0010
C0045
C004C</td><td>Main Motor
I/C Motor
Cooling Fan
Ventilation Fan</td><td>C004E
C0070
C0500
C0510</td><td>Cooling Fan (Power Supply)
Toner Bottle Motor
Fusing Warming-up
Fuser Low Temperature</td></tr>
</table>
<Trouble Counter 2/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C0520
C0650
C0651
C0990</td><td>Fuser High Temperature
Home Sensor
Left Sensor
LCC Transport Motor</td><td>C0991
C0995
C0999
C099D</td><td>LCC Lift 1 Limit
LCC Lift Motor
LCC Lift 2 Limit
LCC Communication</td></tr>
</table>
<Trouble Counter 3/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C0B00
C0B0F
C0B30
C0B38</td><td>Transport Drive Motor
Horiz. Trans. Route Switch
Paper Aligning Bar Unit
Paper Standard Board Unit</td><td>C0B4D
C0B4E
C0B50
C0B80</td><td>Assist Tray Unit
Transaction Tray Unit
Staple Unit
Shift Tray Shift</td></tr>
</table>
<Trouble Counter 4/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C0BA0
C0F32
C0F33
C1038</td><td>Elevate Motor
ATDC Sensor
ATDC Adjust
Engine Connection</td><td>C1300
C1330
C133A</td><td>Polygon Motor
Communication Error (VSYNC)
Communication Error (G/A)</td></tr>
</table>
</td></tr>
</table>

Tech. Rep. Mode ▶ Counter

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>Trouble</td><td>
<Trouble Counter 5/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C133B
C13C0
C13D0</td><td>Communication Error (Option)
I/C Initial Error
EEPROM</td><td>C13F0
C18XX</td><td>HSYNC (SOS)
Printer Controller Error</td></tr>
</table>
<Clearing a Count>
Touch the item key whose count is to be cleared and press the Clear key. If a count is accidentally cleared, pressing the Interrupt key will undo the clear operation.
</td></tr>
<tr><td>Device</td><td>
Shows the numbers of prints for different applications. It also allows the Tech. Rep. to clear each counter.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Copier</td><td>No. of prints made by copier</td></tr>
<tr><td>Printer</td><td>No. of prints made by printer</td></tr>
<tr><td>Report Print</td><td>No. of report prints made</td></tr>
<tr><td>Fax Print</td><td>No. of fax prints made</td></tr>
<tr><td>Fax Transmission</td><td>No. of prints made for fax transmission</td></tr>
</table>
<Clearing a Count>
Select the counter to be cleared with the item key and press the Clear key. If the count is accidentally cleared, pressing the Interrupt key will undo the clear operation.
</td></tr>
<tr><td>Maintenance</td><td>
• This function allows the Tech. Rep. to set the number of copies to be made before the Maintenance Call reminder is given. (1k ~ 9999k)
• It shows the current count value and the above setting. Each counter may be reset to 0 independently of the others:
• When the count reaches the preset value, the icon “⚠” appears in the Status Display.
✻ When “Call Indicated” is selected for “Maintenance Call” available from Tech. Rep. Choice.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Maintenance (Set)</td><td>The Maintenance Call reminder is given when the count reaches the preset value.</td></tr>
<tr><td>Maintenance (Count)</td><td>Counts one for each copy made.</td></tr>
</table>
<Setting a Count>
1. Touch [Maintenance (Set)] and then press the Clear key to clear the count. If the count is accidentally cleared, pressing the interrupt key will undo the clear operation.
2. Enter the desired value from the 10-Key Pad.

<Clearing a Count>
Touch [Maintenance (Count)] and then press the Clear key to clear the count. If the count is accidentally cleared, pressing the interrupt key will undo the clear operation.
</td></tr>
</table>

(5) Function

- This function allows the Tech. Rep. to run the various function tests and make adjustments.

<Setting Procedure>
1. Touch [Function] to open the Function menu screen.
2. Select the particular function to be run.

Tech. Rep. Mode ▶ Function

Touch Panel Display	Operation
F1	<Paper Passage> A paper passage test is carried out after the copier has completed warming up. <Procedure> 1. Select the paper source key. (Touch [Duplex] to check for paper passage from the Duplex Unit.) ✻ If the paper source is not loaded with paper, an Add Paper mark appears at that source. 2. Press the Start key to start the test cycle. The test runs until the paper source runs out of paper. 3. If the Stop key is pressed, the copier feeds the current sheet of paper out before halting. (Another press of the Start key will resume the test cycle.)
F2	<HV Output Setting> Set the output of each HV. ✻ This function is only for factory setting and should never be used in the field.
F7-1	<Original Size Detecting Sensor Adjustment> Automatically adjusts the Original Size Detecting Sensors. <Procedure> 1. Stack five sheets of A3 or 11" × 17" paper on the Original Glass and lower the Original Cover. 2. Press the Start key to let the system start the adjustment sequence. ✻ The system automatically stops as soon as the adjustment sequence is completed. It can nonetheless be halted in mid-sequence with the Stop key, which, however, results in incorrect size detection as the adjustment sequence is incomplete.
F8	<ATDC Sensor Automatic Adjustment> Automatically makes the ATDC Sensor adjustment. <Procedure> Press the Start key to let the system start the adjustment sequence. ✻ The voltage automatically adjusted by this function is displayed for ATDC Sensor Gain of the Level History data.

Tech. Rep. Mode ▶ Function

Touch Panel Display	Operation
F12	<Test Pattern> Outputs a test pattern. ✻ If 2-sided is specified, the system outputs a test pattern in the 2-sided mode. <Procedure> 1. Touch the desired paper source key. (Touch [Duplex] for test pattern output on paper fed from the Duplex Unit.) ✻ If the paper source is not loaded with paper, an Add Paper mark appears at that source. 2. Press the Start key to start the output sequence. (It continues until the paper source runs out of paper.) 3. Press the Stop key to halt the sequence.

(6) I/O Check

- This function displays the details of inputs to each sensor.

<Setting Procedure>
1. Touch [I/O Check] to open the I/O Check menu screen.
2. Touch the desired subfunction key.

Tech. Rep. Mode ▶ I/O Check

Touch Panel Display	Operation
Scan-through ADF	
IR	***NOTE*** • *For details, see TROUBLESHOOTING.*
ADFR	
Output Option	
Printer	

(7) Movement Check

- This function runs a specified mechanism to check for operation.

<Setting Procedure>
1. Touch [Movement Check] to open the Movement Check menu screen.
2. Touch the desired subfunction.

Tech. Rep. Mode ▶ Movement Check

Touch Panel Display	Operation
ADF Paper Passage	Feeds paper through the ADF in the specified mode to check for correct operation. 1-sided No Detect / 1-sided Mixed Orig / 2-sided / SADF <Procedure> 1. Select ADF Paper Passage. 2. Touch the desired mode key. 3. Load originals in the ADF. 4. Press the Start key to let the ADF start feeding originals. ✻ Pressing of the Start key temporarily stops the ADF. (Another press will let the ADF resume the sequence.) ✻ The sequence is completed when there is no more originals in the ADF; however, it is possible to halt the sequence in mid-operation by pressing the Stop key.
Scanner	• Drives the CCD. • Turns ON the Exposure Lamp. • Moves the Scanner according to the set value.
Exp. Lamp Check	Checks for the intensity of the Exposure Lamp light.

(8) RD Mode (SMART)

✻ "SMART" is displayed for the inch areas.

Tech. Rep. Mode ▶ RD Mode

Touch Panel Display	Setting
RD Mode	For making the initial settings of the copier for the Data Terminal.
ID Code	Enter a 7-digit ID code (0000001 to 9999999) from the 10-Key Pad to enable making the following settings. When the ID code is entered and transmitted after the initial settings have been made, it executes the transmission of MAINT. START to the Center. ✻ 0000000 is invalid.
Maintenance	Used to make the initial settings and various transmissions.
DT Setting	Enter the following data.
CT-ID (Password)	Using the 10-Key Pad, enter the 4-digit ID number (0001 to 9999) of the Center which has been programmed in the Center personal computer. ✻ 0000 is invalid.
DT-ID	Using the 10-Key Pad, enter the 6-digit ID number (000001 to 999999) of the Data Terminal. ✻ 000000 is invalid.
TEL No.	Enter the 19-or-less-digit phone number of the modem connected to the Center personal computer from the 10-Key Pad. ✻ In addition to the 10-Key Pad and Clear key, use the following keys to enter the phone number. Interrupt key: For a pause (3 sec. or more), "-" Pause key: For a pause (3 sec. or more), "-" P key: For a "pulse" dialing, "P" T key: For a "tone" dialing, "T" W key: For a wait code (waiting for a signal from the other party), "W" ✻ key: For an ISDN subaddress, "✻" # key: For switching from the extension line to outside line, or vice versa, "#"
Initial Transmission	Used to perform the initial transmission from the copier to the Center to check for correct communication when the Data Terminal has been set up.
Counter Clear	Used to clear the count of the spare counter set by the Center. <Procedure> 1. Touch [Counter Clear] to open the Counter Clear screen. 2. Touch the number assigned to the counter to be cleared.
Call Completion	Used by the Tech. Rep. to notify the Center that his/her service job for the copier has been completed.

Tech. Rep. Mode ▶ RD Mode

Touch Panel Display	Setting (The default is **Highlighted**).
RD Mode	———
RAM Clear	Reinitializes the Data Terminal. YES / **NO**
Common DT	Set the following functions.
Dial Mode	Select the type of telephone line of the user. **Tone** / Pulse
Auto Receive	Choose “Yes” or “No” for the auto reception function. **YES** / NO ✻ Select “Yes” if the line is dedicated to the Data Terminal.
Result Code	Enter the result code for connection to the modem when the line is connected. (0 to 999)

(9) ROM Version

Tech. Rep. Mode ▶ ROM Version

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>ROM Version</td><td>Displays the current ROM version information.
✻ No version information is displayed for a machine that is not connected to the system.
<Procedure>
1. Touch [ROM Version] to open the ROM Version screen.
2. The screen shows the ROM version information of various machines configured in the system.
<table>
<tr><th colspan="2">Display</th><th>Description</th></tr>
<tr><td>MSC</td><td>—</td><td>MFB Board</td></tr>
<tr><td>Message</td><td>IC4</td><td>MFB Board</td></tr>
<tr><td>Printer</td><td>IC1</td><td>Master Board</td></tr>
<tr><td>ADFR</td><td>IC3</td><td>ADFR Board</td></tr>
<tr><td>LCC</td><td>IC7</td><td>LCC Board</td></tr>
<tr><td>Finisher</td><td>IC3</td><td>Finisher/Job Tray Board</td></tr>
<tr><td>IIF</td><td>—</td><td>IIF2 Board</td></tr>
</table>
</td></tr>
</table>

(10) Level History

- This function is used to show the various level histories which are changed according to the operating conditions of the copier and user requirements.

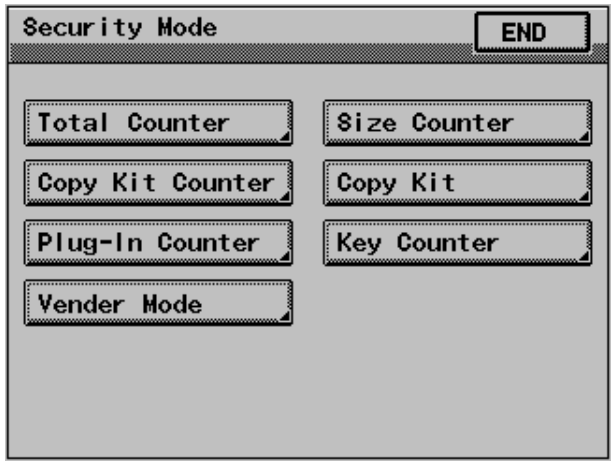
Tech. Rep. Mode ▶ Level History

<table>
<tr><th>Touch Panel Display</th><th>Setting</th></tr>
<tr><td>Level History</td><td>
<ATDC Set>
Shows the voltage set by ATDC Sensor Automatic Adjustment (F8).
✻ The Level History data is updated when the ATDC Sensor Automatic Adjustment (F8) is completed.
<table>
<tr><th>Variable Range</th><th>Increments</th></tr>
<tr><td>123 to 186 (steps)</td><td>1 Step</td></tr>
</table>
<ATDC Current>
Shows the current, approximate ATDC Sensor T/C setting in percentage.
<table>
<tr><th>Variable Range</th><th>Increments</th></tr>
<tr><td>3.0 to 19.0 (%)</td><td>0.5%</td></tr>
</table>
<Vg Current>
Displays the grid voltage as corrected through image stabilization and related functions.
<table>
<tr><th>Variable Range</th><th>Increments</th></tr>
<tr><td>-534 to -748 (V)</td><td>-</td></tr>
</table>
<Vb Current>
Displays the developing bias voltage as corrected through image stabilization and related function.
<table>
<tr><th>Variable Range</th><th>Increments</th></tr>
<tr><td>-409 to -623 (V)</td><td>-</td></tr>
</table>
</td></tr>
</table>

6 SECURITY MODE

- This function allows the Tech. Rep. to make various settings.

6-1. Security Mode Menu Screen



1167S011CA

6-2. Security Mode Function Setting Procedure

<Setting Procedure>

1. Set the copier into the Tech. Rep. mode by one of the following methods:
   A. With the copier turned ON, press the Tech. Rep. Setting Switch.
   B. With the Meter Count screen opened from Utility, press the following keys in this order:

   [Stop Key] ➡ [0] ➡ [0] ➡ [Stop Key] ➡ [0] ➡ [1]

2. Enter the Security mode by pressing the following keys in this order:

   [Stop Key] ➡ [9]

3. Select the particular Security mode to be set.
4. Make the necessary settings by following the instructions given sequentially on the screen.

✻ The Function selected is highlighted.

<Exiting the Mode>

Perform any one of the following steps to go back to the Basic screen.

- Press the Panel Reset key and Touch [Exit] on the Tech. Rep. Mode screen.
- Touch [END] on the Security Mode screen. Then touch [Exit] on the Tech. Rep. Mode screen.

6-3. Settings in the Security Mode

Tech. Rep. Mode ▶ Security Mode

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Total Counter</td><td>Select the conditions by which the Total Counter count is increased.
<table>
<tr><td>Mode 1</td><td>1 count per 1 copy cycle (normal mode)</td></tr>
<tr><td>Mode 2</td><td>Multiple count-up according to paper size and 1/2-sided copying</td></tr>
<tr><td>Mode 3</td><td>Multiple count-up according to paper size and 1/2-sided copying</td></tr>
</table>
✻ See the Count-up Table for details.</td></tr>
<tr><td>Size Counter</td><td>Select the size of the paper to be counted by the Size Counter.
<table>
<tr><td>No Count</td><td>A3
11×17</td><td>A3 / B4
11×17
Legal</td><td>A3 /11×17
B4 /11×14
FLS/Legal</td><td>A6</td></tr>
</table>
✻ See the Count-up Table for details.</td></tr>
<tr><td>Copy Kit</td><td>• Allows for setting the desired threshold before the Maintenance Call reminder is given.
• Displays both the current value and the above setting value. Each counter can also be reset independently of the other.
• When the current value (Current) becomes the setting value (Set), the icon “⚠” appears in the Status Display if “Mode 2” is selected for “Copy Kit Counter” and the Maintenance Call reminder (M4) is displayed if “Mode 3” is selected for “Copy Kit Counter.”
✻ Whether the initiation of a new copy cycle is inhibited or not when the current value exceeds the setting value depends on the setting made with Copy Kit Counter.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Set</td><td>Gives a Maintenance Call when Current value reaches Set value.</td></tr>
<tr><td>Current</td><td>Counts up for each copy made.</td></tr>
</table>
<Counter Setting Procedure>
1. Touch [Set] and press the Clear key to clear the current setting. If the setting is accidentally cleared, pressing of the Interrupt key will undo the clear operation.
2. Enter the desired value from the 10-Key Pad.
<Clearing the Count>
Touch [Current] and press the Clear key to clear the count. If the count is accidentally cleared, pressing of the Interrupt key will undo the clear operation.</td></tr>
</table>

Tech. Rep. Mode ▶ Security Mode

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Copy Kit Counter</td><td>Select whether to set the count or not for the Copy Kit Counter and select whether to inhibit the initiation of a new copy cycle or not when the Current value reaches Set value.
<table>
<tr><td>Mode 1</td><td>No counting</td></tr>
<tr><td>Mode 2</td><td>Counted and permits copying even when the Set value is reached.</td></tr>
<tr><td>Mode 3</td><td>Counted and inhibits copying when the Set value is reached.</td></tr>
</table></td></tr>
<tr><td>Plug-In Counter</td><td>Select the condition by which the Key Counter count is increased.
<table>
<tr><td>Copies Made</td><td>Copy Cycles</td></tr>
</table>
✻ See the Count-up Table for details.</td></tr>
<tr><td>Key Counter</td><td>Set whether a Key Counter is plugged in (“ON”) or not (“OFF”).
<table>
<tr><td>ON</td><td>OFF</td></tr>
</table></td></tr>
<tr><td>Vender Mode</td><td>Select the medium to be used when the Key Counter or Vender is used.
✻ This function is not valid if “OFF” is selected for “Key Counter.”
<table>
<tr><td>OFF</td><td>Coin</td><td>Card</td></tr>
</table></td></tr>
</table>

Tech. Rep. Mode ▶ Security Mode

<Count-up Table>

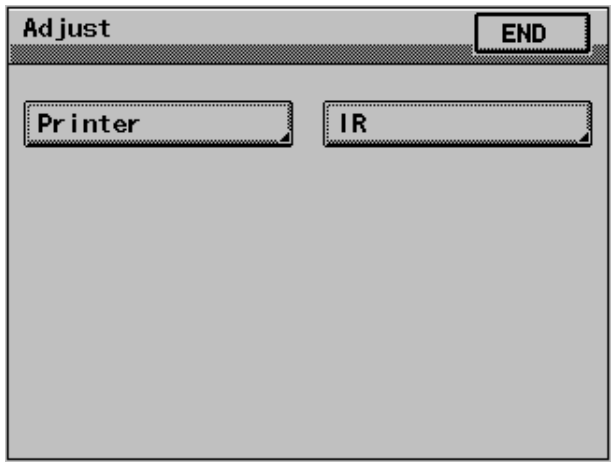
Copying		1-Sided						2-Sided					
Size		Size other than those set			Set size			Size other than those set			Set size		
Total		Mode			Mode			Mode			Mode		
		1	2	3	1	2	3	1	2	3	1	2	3
Total (mechanical, electronic)		1			1	2	2	2			2	4	4
Size (electronic)		0			1	1	2	0			2	2	0
2-Sided Total (electronic)		0			0			1	1	2	1	1	4
2-Sided Size (electronic)		0			0			0			1	1	4
Total by account		1			1	2	2	2			2	4	4
Size by account		0			1	1	2	0			2	2	4
Key (mechanical)	Counting copies	1			1	2	2	1	2	2	1	4	4
	Counting copy cycles	1			1	2	2	2			2	4	4

0: No count 1: 1 count 2: 2 counts 3: 3 counts 4: 4 counts

7 ADJUST MODE

- Adjust mode is for adjustments to be made before shipment at the factory. As a rule, use this mode only when MFB Board UN2, or EEPROM (IC3A) on Master Board PWB-A has been replaced with a new one.

7-1. Adjust Mode Menu Screen



1167S012CA

7-2. Adjust Mode Function Setting Procedure

<Setting Procedure>

1. Set the copier into the Tech. Rep. mode by the following method:

- With the Meter Count screen opened from Utility, press the following keys in this order.

[Stop Key] ➡ [0] ➡ [0] ➡ [Stop Key] ➡ [0] ➡ [1]

2. Enter the Adjust mode by pressing the following keys in this order:

[Stop Key] ➡ [Start Key]

3. Select the particular Adjust mode function to be set.
4. Make the necessary settings by following the instructions given sequentially on the screen.

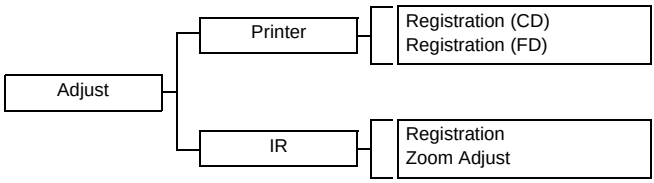
✻ The function selected is highlighted.

<Exiting the Mode>

Perform any one of the following steps to go back to the Basic screen.

- Press the Panel Reset key and Touch [Exit] on the Tech. Rep. Mode screen.
- Touch [END] on the Adjust mode screen. Then touch [Exit] on the Tech. Rep. Mode screen.

7-3. Adjust Mode Function Tree



7-4. Settings in the Adjust Mode

(1) Printer

- This function is used to enter the adjustment values as they relate to the printer.

<Setting Procedure>
1. Touch [Printer] to open the Printer screen.
2. Select the desired subfunction.

Tech. Rep. Mode ▶ Adjust

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Registration (CD)</td><td>Adjust registration of the printer in the main scanning direction.
<table>
<tr><td>1st Drawer</td><td rowspan="3">-4.0mm..... 0 .....+4.0mm</td></tr>
<tr><td>2nd Drawer</td></tr>
<tr><td>3rd Drawer</td></tr>
<tr><td>4th Drawer</td><td rowspan="3">Advanced timing ◄——► Retarded timing</td></tr>
<tr><td>5th Drawer</td></tr>
<tr><td>Duplex</td></tr>
</table>
✻ Adjust “Duplex” after adjustments have been completed for all drawers.</td></tr>
<tr><td>Registration (FD)</td><td>Adjust registration of the printer in the sub-scanning direction.
<table>
<tr><td>-19..... 0 .....+19</td></tr>
<tr><td>Advanced timing ◄——► Retarded timing</td></tr>
</table></td></tr>
</table>

(2) IR

- This function is used to enter the adjustment values as they relate to the IR.

<Setting Procedure>
1. Touch [IR] to open the IR screen.
2. Select the desired subfunction.

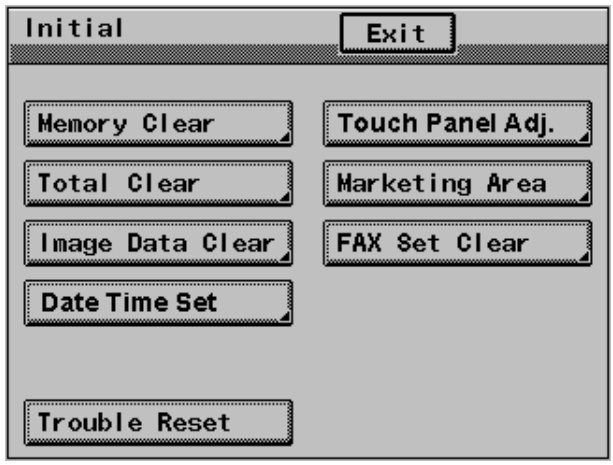
Tech. Rep. Mode ▶ Adjust

Touch Panel Display	Setting (The default is **Highlighted**).
Registration	Adjust registration of the Scanner in the main and sub-scanning directions. -127 dot.....**0**.....+127 dot Smaller ◄——► Greater
Zoom Adjust	Adjust the scanning zoom ratio of the Scanner in the main and sub-scanning directions. 0.990.....**1.000**.....1.010 Smaller ◄——► Greater

8 INITIAL MODE

- Initial mode is used to initialize the various service functions.

8-1. Initial Mode Menu Screen



1167S013CB

8-2. Initial Mode Function Setting Procedure

<Setting Procedure>

1. Enter the Initial mode by pressing the following keys in this order:

   Warm Restart Switch ON ➡ Enter “3” from the 10-Key Pad when “.” appears at the center on the left side of the screen while the start-up screen is being displayed.

2. Select the particular Initial mode function to be set.
3. Make the necessary settings by following the instructions given sequentially on the screen.

✻ The function selected is highlighted.

<Exiting the Mode>

- Touch [Exit] on the Initial mode screen to go back to the Basic screen.

8-3. Settings in the Initial Mode

Tech. Rep. Mode ▶ Initial

Touch Panel Display	Setting (The default is **Highlighted**).
Memory Clear	Clears all data except the electronic counters, Adjust, Copy Track-related, and DT-related settings. Yes / **NO**
Touch Panel Adj.	Corrects deviation in the sensitive area of the Touch Panel. <Procedure> Sequentially touch the four points marked with + on the screen as instructed by the arrow.
Total Clear	Clears all of the electronic counters and Copy Track-related data. Yes / **NO**
Marketing Area	Selects the settings for the fixed zoom ratios, paper sizes, and others according to the marketing area. **MJ** / MC / MH / Others
Image Data Clear	Clears the image data stored in file memory of the MFB Board. Yes / **NO**
FAX Set Clear	Clears the fax-related settings. ✻ Two or more items can be selected. Own Setting / The Address / Transmission Manage / Soft Switch — Yes / **NO**
Date Time Set	Sets the time-of-day and date.
Trouble Reset	Resets all malfunctions including the Fusing ones (C05XX). ✻ Malfunctions other than Fusing ones can be reset by turning OFF and ON the Power Switch and opening and closing the Side Cover.

Di350

DIS/REASSEMBLY, ADJUSTMENT

MINOLTA

Safety Precautions for Inspection and Service

When performing inspection and service procedures, observe the following precautions to prevent accidents and ensure utmost safety.

✻ Depending on the model, some of the precautions given in the following do not apply.

Different markings are used to denote specific meanings as detailed below.

WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

The following graphic symbols are used to give instructions that need to be observed.

Used to call the service technician's attention to what is graphically represented inside the marking (including a warning).

Used to prohibit the service technician's from doing what is graphically represented inside the marking.

Used to instruct the service technician's to do what is graphically represented inside the marking.

WARNING

1. Always observe precautions.

- Parts requiring special attention in this product will include a label containing the mark shown on the left plus precautionary notes. Be sure to observe the precautions.
- Be sure to observe the "Safety Information" given in the Operator's Manual.

2. Before starting the procedures, be sure to unplug the power cord.

- This product contains a high-voltage unit and a circuit with a large current capacity that may cause an electric shock or burn.
- The product also contains parts that can jerk suddenly and cause injury.
- If this product uses a laser, laser beam leakage may cause eye damage or blindness.

3. Use the specified parts.

- For replacement parts, always use the genuine parts specified in the manufacturer's parts manual. Installing a wrong or unauthorized part could cause dielectric breakdown, overload, or undermine safety devices resulting in possible electric shock or fire.
- Replace a blown electrical fuse or thermal fuse with its corresponding genuine part specified in the manufacturer's parts manual. Installing a fuse of a different make or rating could lead to a possible fire. If a thermal fuse blows frequently, the temperature control system may have a problem and action must be taken to eliminate the cause of the problem.

4. Handle the power cord with care and never use a multiple outlet.

- Do not break, crush or otherwise damage the power cord. Placing a heavy object on the power cord, or pulling or bending it may damage it, resulting in a possible fire or electric shock.
- Do not use a multiple outlet to which any other appliance or machine is connected.
- Be sure the power outlet meets or exceeds the specified capacity.

5. Be careful with the high-voltage parts.

- A part marked with the symbol shown on the left carries a high voltage. Touching it could result in an electric shock or burn. Be sure to unplug the power cord before servicing this part or the parts near it.

6. Do not work with wet hands.

- Do not unplug or plug in the power cord, or perform any kind of service or inspection with wet hands. Doing so could result in an electric shock.

7. Do not touch a high-temperature part.

- A part marked with the symbol shown on the left and other parts such as the exposure lamp and fusing roller can be very hot while the machine is energized. Touching them may result in a burn.
- Wait until these parts have cooled down before replacing them or any surrounding parts.

8. Maintain a grounded connection at all times. (This item may not apply in the USA.)

- Be sure to connect the ground wire to the ground terminal even when performing an inspection or repair. Without proper grounding, electrical leakage could result in an electric shock or fire.
- Never connect the ground wire to a gas pipe, water pipe, telephone ground wire, or a lightning conductor.

9. Do not remodel the product.

- Modifying this product in a manner not authorized by the manufacturer may result in a fire or electric shock. If this product uses a laser, laser beam leakage may cause eye damage or blindness.

10. Restore all parts and harnesses to their original positions.

- To promote safety and prevent product damage, make sure the harnesses are returned to their original positions and properly secured in their clamps and saddles in order to avoid hot parts, high-voltage parts, sharp edges, or being crushed.
- To promote safety, make sure that all tubing and other insulating materials are returned to their original positions. Make sure that floating components mounted on the circuit boards are at their correct distance and position off the boards.

CAUTION

1. Precautions for Service Jobs

- A toothed washer and spring washer, if used originally, must be reinstalled. Omitting them may result in contact failure which could cause an electric shock or fire.
- When reassembling parts, make sure that the correct screws (size, type) are used in the correct places. Using the wrong screw could lead to stripped threads, poorly secured parts, poor insulating or grounding, and result in a malfunction, electric shock or injury.
- Take great care to avoid personal injury from possible burrs and sharp edges on the parts, frames and chassis of the product.
- When moving the product or removing an option, use care not to injure your back or allow your hands to be caught in mechanisms.

2. Precautions for Servicing with Covers and Parts Removed

- Wherever feasible, keep all parts and covers mounted when energizing the product.
- If energizing the product with a cover removed is absolutely unavoidable, do not touch any exposed live parts and use care not to allow your clothing to be caught in the moving parts. Never leave a product in this condition unattended.
- Never place disassembled parts or a container of liquid on the product. Parts falling into, or the liquid spilling inside, the mechanism could result in an electric shock or fire.
- Never use a flammable spray near the product. This could result in a fire.
- Make sure the power cord is unplugged before removing or installing circuit boards or plugging in or unplugging connectors.
- Always use the interlock switch actuating jig to actuate an interlock switch when a cover is opened or removed. The use of folded paper or some other object may damage the interlock switch mechanism, possibly resulting in an electric shock, injury or blindness.

3. Precautions for the Working Environment

- The product must be placed on a flat, level surface that is stable and secure.
- Never place this product or its parts on an unsteady or tilting workbench when servicing.
- Provide good ventilation at regular intervals if a service job must be done in a confined space for a long period of time.
- Avoid dusty locations and places exposed to oil or steam.
- Avoid working positions that may block the ventilation ports of the product.

4. Precautions for Handling Batteries

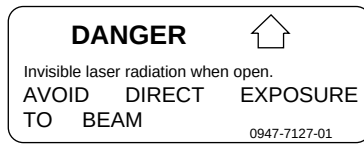
- Replace a rundown battery with the same type as specified in the manufacturer's parts manual.
- Before installing a new battery, make sure of the correct polarity of the installation or the battery could burst.
- Dispose of used batteries according to the local regulations. Never dispose of them at the user's premises or attempt to try to discharge one.

5. Precautions for the Laser Beam (Only for Products Employing a Laser)

- Removing the cover marked with the following caution label could lead to possible exposure to the laser beam, resulting in eye damage or blindness. Be sure to unplug the power cord before removing this cover.
- If removing this cover while the power is ON is unavoidable, be sure to wear protective laser goggles that meet specifications.
- Make sure that no one enters the room when the machine is in this condition.
- When handling the laser unit, observe the “Precautions for Handling Laser Equipment.”

注意– ここを開くと不可視レーザ光が出ます。ビームを直接見たり、触れたりしないでください。
CAUTION- INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
VORSICHT- UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN
ADVARSEL- USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN
VARO! AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE ÄLÄ KATSO SÄTEESEEN
ADVARSEL- USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING
VARNING- OSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÄR ÖPPNAD STRÅLEN ÄR FARLIG
注意： 当您打开这里时，会出现肉眼看不见的激光射线，请不要直视或接触光线。

1167P001AA



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Other Precautions

- To reassemble the product, reverse the order of disassembly unless otherwise specified.
- While the product is energized, do not unplug or plug connectors into the circuit boards or harnesses.
- The magnet roller generates a strong magnetic field. Do not bring it near a watch, floppy disk, magnetic card, or CRT tube.
- An air gun and vacuum cleaner generates a strong electrostatic charge that can destroy the ATDC sensor and other sensors. Before cleaning a component with one of these devices, be sure to remove all the sensors. Otherwise, use a blower brush and cloth when cleaning parts.
- When handling circuit boards with MOS ICs, observe the “INSTRUCTIONS FOR HANDLING THE PWBs WITH MOS ICs” (applicable only to the products using MOS ICs).
- The PC Drum is a very delicate component. Observe the precautions given in “HANDLING OF THE PC DRUM” because mishandling may result in serious image problems.
- Note that replacement of a circuit board may call for readjustments or resetting of particular items, or software installation.
- After completing a service job, perform a safety check. Make sure that all parts, wiring and screws are returned to their original positions.
- Check the area surrounding the service site for any signs of damage, wear or need of repair.
- Do not pull out the toner hopper while the toner bottle is turning. This could result in a damaged hopper motor or locking mechanism.
- If the product is to be run with the front door open, make sure that the toner hopper is in the locked position.

Used Batteries Precautions

ALL Areas

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

Germany

VORSICHT!

Explosionsgefahr bei unsachgemäßem Austausch der Batterie.
Ersatz nur durch denselben oder einen vom Hersteller empfohlenen ähnlichen Typ.
Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

France

ATTENTION

Ily a danger d'explosion s'ily a remplacement incorrec de la batterie.
Remplacer uniquement avec une batterie du meme type ou d'un type équivalent recommande par le constructueur.
Mettre au rebut les batteries usageés conformément aux instructions du fabricant.

Denmark

ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

Norway

ADVARSEL

Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

Sweden

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

Finland

VAROITUS

Paristo voi räjähtää, los se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä Käytetty paristo valmistajan ohjeiden mukaisesti.

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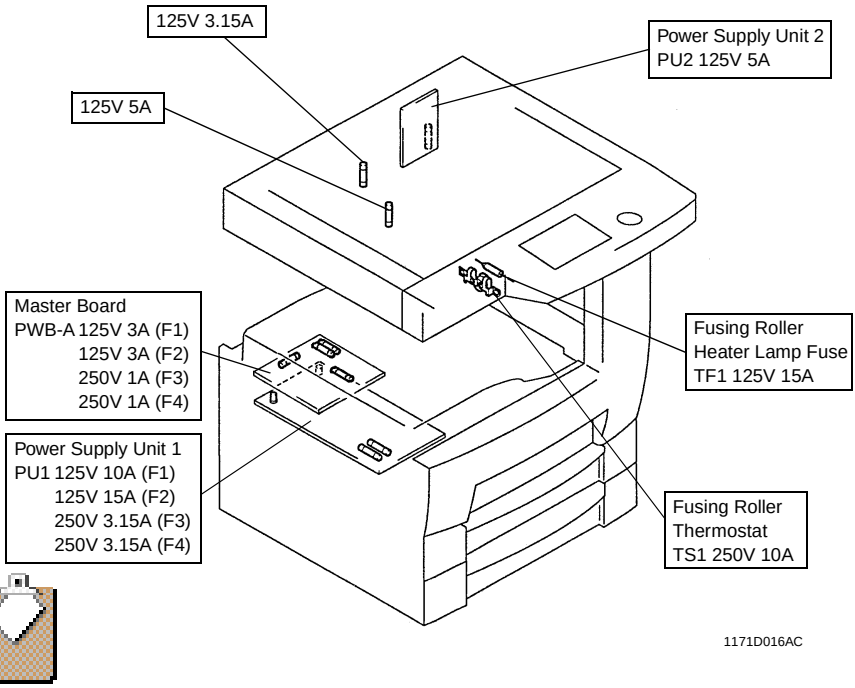
1 SERVICE INSTRUCTIONS

1-1. IDENTIFICATION OF FUSES AND CIRCUIT BREAKERS



1-2. PRECAUTIONS FOR HANDLING THE LASER EQUIPMENT

- The laser used in this copier is a semiconductor laser having the following specifications.

Max. power:	5mW
Output wavelength:	770~80nm

- When laser protective goggles are to be used, select ones with a lens conforming to the above specifications.
- When a disassembly job needs to be performed in the laser beam path, such as when working around the printerhead and PC Drum, be sure first to turn the copier OFF.
- If the job requires that the copier be left ON, take off your watch and ring and wear laser protective goggles.
- A highly reflective tool can be dangerous if it is brought into the laser beam path. Use utmost care when handling tools on the user's premises.
- The printerhead is not maintainable in the field. It is to be replaced as an assembly including the control board. Never, therefore, attempt to remove the laser diode or adjust trimmers on the control board.

1-3. INSTRUCTIONS FOR HANDLING THE PWBs WITH MOS ICs

The following precautions must be observed when handling P.W. Boards with MOS (Metal Oxide Semiconductor) ICs.

During Transportation/Storage:
- During transportation or when in storage, new P.W. Boards must not be indiscriminately removed from their protective conductive bags.
- Do not store or place P.W. Boards in a location exposed to direct sunlight.
- When it becomes absolutely necessary to remove a Board from its conductive bag or case, always place it on its conductive mat in an area as free as possible from static electricity.
- Do not touch the pins of the ICs with your bare hands.

During Replacement:
- Before unplugging connectors from the P.W. Boards, make sure that the power cord has been unplugged from the outlet.
- When removing a Board from its conductive bag or conductive case, do not touch the pins of the ICs or the printed pattern. Place it in position by holding only the edges of the Board.
- Before plugging connectors into the Board, make sure that the power cord has been unplugged from the power outlet.

During Inspection:
- Avoid checking the IC directly with a multimeter; use connectors on the Board.
- Never create a closed circuit across IC pins with a metal tool.
- When it is absolutely necessary to touch the ICs and other electrical components on the PW Board, be sure to ground your body.

1-4. HANDLING OF THE IMAGING CARTRIDGE

During Transportation/Storage:
- Use the specified carton whenever moving or storing the Imaging Cartridge.
- The storage temperature is in the range between –20°C and +40°C.
- In summer, avoid leaving the Imaging Cartridge in a car for a long time.

Handling:
- Ensure that the correct Imaging Cartridge is used.
- Store the Imaging Cartridge in a site that is not exposed to direct sunlight.

Precautionary Information on the PC Drum Inside the Imaging Cartridge:
- The PC Drum exhibits greatest light fatigue after being exposed to strong light over an extended period of time. Never, therefore, expose it to direct sunlight.
- Use care not to contaminate the surface of the PC Drum with oil-base solvent, fingerprints, and other foreign matter.
- Do not scratch the surface of the PC Drum.
- Do not apply chemicals to the surface of the PC Drum.
- Do not attempt to wipe clean the surface of the PC Drum.

1-5. PARTS WHICH MUST NOT BE TOUCHED

(1) Red painted Screws

Purpose of Application of Red Paint
Red painted screws show that the assembly or unit secured can only be adjusted or set at the factory and should not be readjusted, set, or removed in the field.

Note that when two or more screws are used on the part in questions, only one representative screw may be marked with red paint.

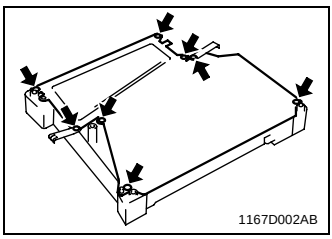
(2) Variable Resistors on Board

Do not turn the variable resistors on boards for which no adjusting instructions are given in "ADJUSTMENT."

(3) Other Screws

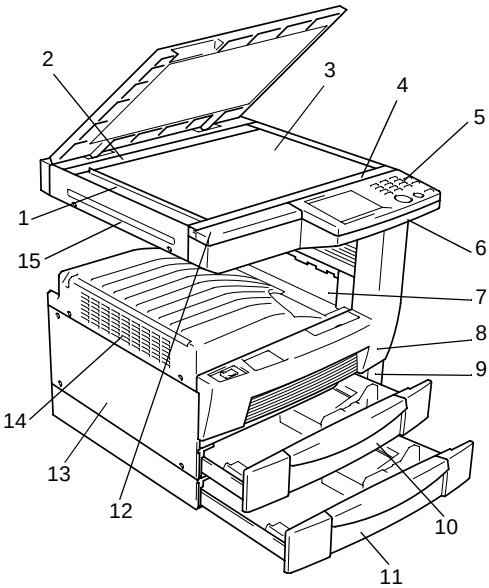
Although not marked with red paint, the following screws must not be loosened or readjusted.

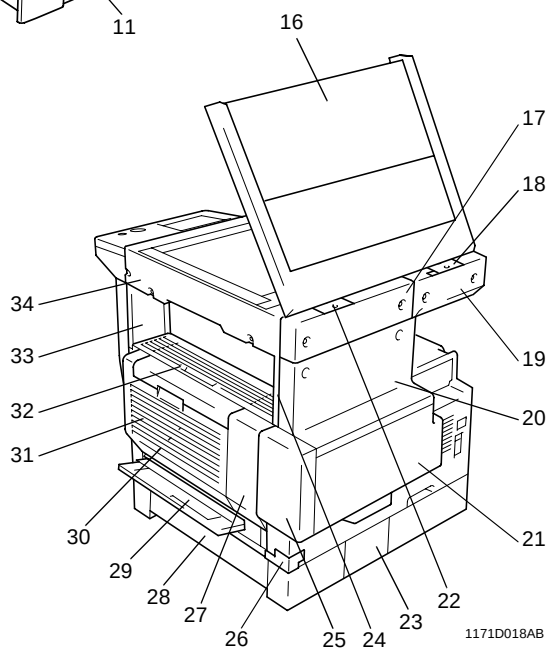
8 screws on the PH Unit Cover



2 DISASSEMBLY/REASSEMBLY

2-1. DOORS, COVERS, AND EXTERIOR PARTS: IDENTIFICATION AND REMOVAL PROCEDURES



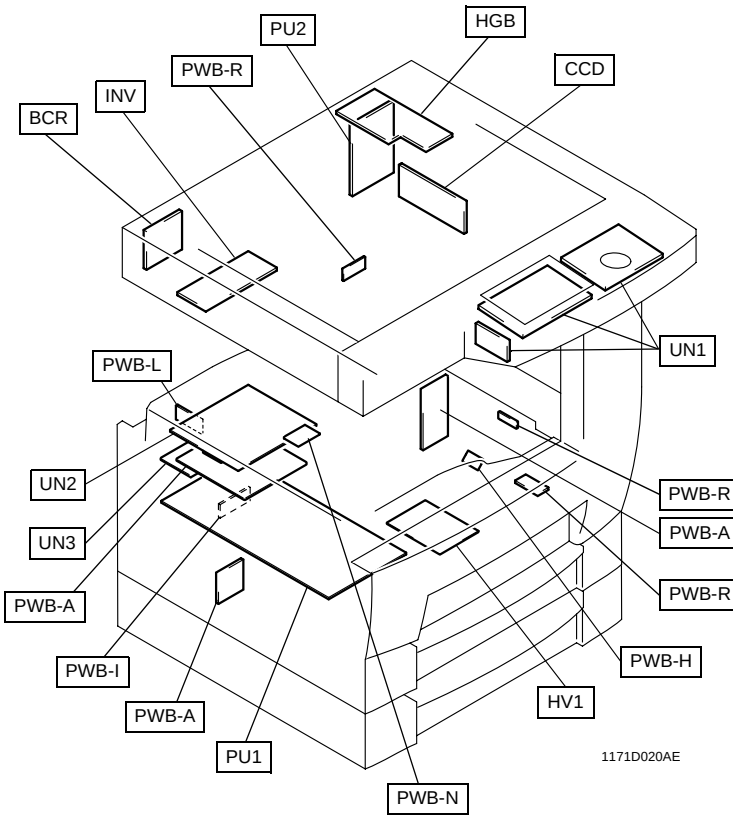


No.	Part Name	Removal Procedure
1	ADF Glass Assy.	Remove No. 2, 4. → Remove two holding brackets. → Remove two screw caps. → Remove two screws that secure the ADF Glass Assy.
2	Rear Holding Bracket	Remove No. 17, 18. → Remove two screw caps. → Remove two screws that secure the Rear Holding Bracket.
3	Original Glass	Remove No. 4. → Remove two holding brackets.
4	Front Holding Bracket	Remove two screw caps. → Remove two screws that secure the Front Holding Bracket.
5	Control Panel	Remove No. 8. → Remove No. 6. → Remove No. 4. → Remove No. 12. → Remove five screws that secure the control panel and unplug one connector.
6	Front Upper Cover	Remove No. 8. → Remove No. 12. → Remove six screws that secure the Front Upper Cover.
7	Exit Lower Cover	Remove No. 32. → Remove No. 24. → Unhook the two tabs of the Exit Lower Cover and remove the Exit Lower Cover.
8	Front Cover	Slide out No. 10. → Open No. 25. → Remove three screws that secure the Front Cover.
9	LED Cover	Slide out No. 10. → Remove one screw that secure the LED Cover.
10	MP Cassette	Slide out the MP Cassette. → Pushing the tab on the right rail, pull out the cassette.
11	500-Sheet Cassette	Slide out the 500-Sheet Cassette. → Pushing the tabs on both the right and left rails, pull out the cassette.
12	Upper Front Left Cover	Remove No. 4. → Remove two screws that secure the Upper Front Left Cover.
13	Left Cover	Remove six screws that secure the Left Cover.
14	Upper Cover	Remove two screws that secure the Upper Cover.
15	Left IR Cover	Remove two screws that secure the Left IR Cover.
16	Original Cover	———
17	Rear Right IR Cover	Remove No. 22. → Remove No. 19. → Remove two screws that secure the Rear Right IR Cover.
18	Left Hinge Cover	Remove one screw that secure the Left Hinge Cover.
19	Rear Left IR Cover	Remove No. 17. → Remove two screws that secure the Rear Left IR Cover.
20	Rear Upper Cover	Remove No. 21. → Remove No. 17. → Remove No. 19. → Remove four screws that secure Rear Upper Cover.
21	Rear Lower Cover	Remove No. 26. → Remove No. 25. → Open No. 30. → Open No. 32. → Remove five screws that secure the Rear Lower Cover.
22	Right Hinge Cover	Remove one screw that secure the Right Hinge Cover.
23	Connector Cover	Remove one screw that secure the Connector Cover.
24	Rear Inside Cover	Remove No. 22. → Remove three screws that secure the Rear Inside Cover.

No.	Part Name	Removal Procedure
25	Toner Bottle Cover	Open the Toner Bottle Cover. → Unhook the dowels at four places of the Toner Bottle Cover.
26	Harness Cover	Remove one screw that secure the Harness Cover.
27	Duplex Unit Rear Cover	Remove No. 31. → Remove two screws that secure the Duplex Unit Rear Cover.
28	500-Sheet Cassette Side Cover	Open the Side Cover. → Slide the Side Cover to the front and, at the same time, pull the rear side out of the frame.
29	Manual Bypass Tray	Remove No. 26. → Unplug one connector. → Remove three screws that secure the Manual Bypass Tray.
30	Side Cover	———
31	Duplex Unit	Remove two screws that secure the Duplex Unit.
32	Fusing Unit	See D-26.
33	Front Inside Cover	Remove No. 8. → Remove No. 32. → Remove two screws that secure the Front Inside Cover.
34	Right IR Cover	Remove three screws that secure the Right IR Cover.

2-2. REMOVAL OF CIRCUIT BOARDS AND OTHER ELECTRICAL COMPOMENTS

- When removing a circuit board or other electrical component, refer to “PRECAUTIONS FOR HANDLING THE PWBs” contained in SWITCHES ON PWBs and follow the corresponding removal procedures.
- The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.
- Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.

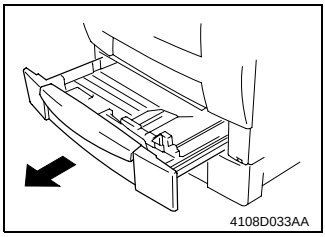


Symbol	Part Name	Removal Procedure
PWB-A	Master Board	Remove the Upper Cover. → Remove nine screws and the MFB Box Cover. → Remove two screws and the MFB Box Assy. → PWB-A
PWB-A	Cassette Main Board	Remove the Connector Cover. → PWB-A
PWB-A	Duplex Main Board	Remove the Duplex Unit. → Remove the Duplex Unit Rear Cover. → PWB-A
PWB-H	Double Feed Detecting Board	Slide out the MP Cassette. → Remove one screw and the PWB-H Mounting Bracket Assy. → PWB-H
PWB-I	Paper Size Detecting Board	Remove the Harness Cover. → Remove the Rear Cover. → Remove two screws and the PW Board Cover. → PWB-I
PWB-L	PPM Switching Board	Remove the Harness Cover. → Remove the Rear Cover. → Remove one screw and the PWB-L Mounting Bracket Assy. → PWB-L
PWB-N	RAM Board	Remove the Upper Cover. → Remove nine screws and the MFB Box Cover. → PWB-N
PWB-R	Fuser Frame Register Board	Remove the Fusing Unit. → Remove the rear lamp cover. → PWB-R
PWB-R	Pre-Transfer Guide Plate Register Board 1	Remove the Vertical Transport Unit. → Remove two screws and two ground plates. → PWB-R
PWB-R	Pre-Transfer Guide Plate Register Board 2	Open the Side Cover. → Remove the Imaging Cartridge. → Remove one screw and the PW Board Cover. → PWB-R
PU1	Power Supply Board 1	Remove the Harness Cover. → Remove the Rear Cover. → Remove the Left Cover. → Remove five screws and the Reinforcement Bracket. → Remove three screws and the PU1 Mounting Bracket Assy. → PU1
PU2	Power Supply Board 2	Remove the Harness Cover. → Remove the Rear Cover. → PU2
HV1	High Voltage Unit	Open the Side Cover. → Remove the Imaging Cartridge. → Remove two screws and the HV1 Cover. → HV1
INV	Inverter Board	Remove the Original Glass. → INV
BCR	BCR Board	Remove the Rear Left IR Cover. → Remove three screws and the Harness Cover. → BCR
HGB	HGB Board	Remove the Original Glass. → Remove the Right IR Cover. → Remove the Optical Cover. → Remove the Rear Lower Cover. → Remove the Rear Upper Cover. → Remove the Shielding Plate. (U.S.A. and Canada only) → Remove one screw and the Harness Cover. → Unplug nine connectors. → Remove five screws and the HGB Mounting Bracket Assy. → HGB
CCD	CCD Board	See D-15.

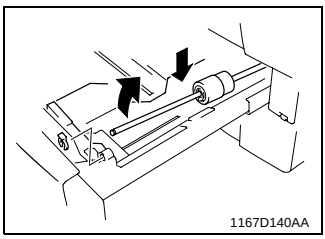
Symbol	Part Name	Removal Procedure
UN2	MFB Board	Remove the Upper Cover. → Remove nine screws and the MFB Box Cover. → UN2
UN3	Polygon Motor Drive Board	Remove the PH Unit. → UN3

2-3. PAPER TAKE-UP/TRANSPORT SECTION

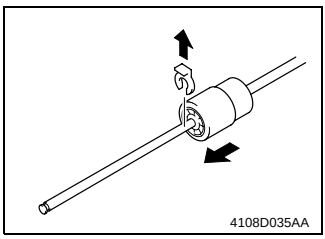
(1) Replacement of the Paper Take-Up Roll



1. Slide out the MP Cassette.

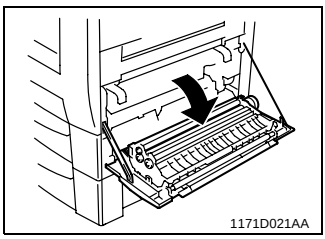


2. Lock the Paper Lifting Plate.
3. Snap off one C-clip of the Paper Take-Up Roll Assy.
4. Slide the Paper Take-Up Roll Assy to the rear so that it can be pulled off the bushing at the front.

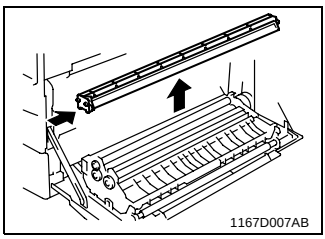


5. Snap off one C-clip and remove and replace the Paper Take-Up Roll.

(2) Replacement of the Paper Dust Remover

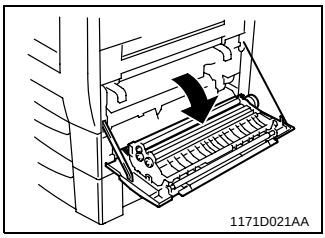


1. Open the Side Cover.

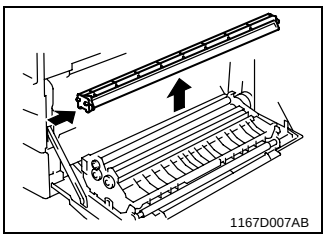


2. Remove the Paper Dust Remover and replace it.

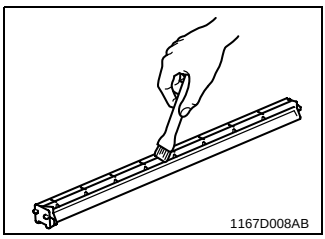
(3) Cleaning of the Paper Dust Remover



1. Open the Side Cover.

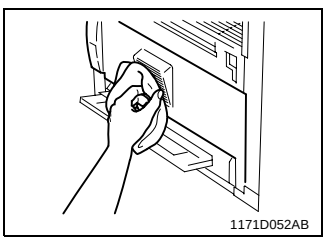


2. Remove the Paper Dust Remover.



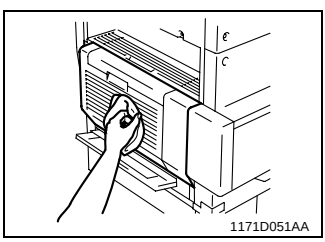
3. Using a brush, whisk dust and dirt off the Paper Dust Remover.

(4) Cleaning of the Side Cover



Using a soft cloth dampened with alcohol, wipe the Side Cover.

(5) Cleaning of the Duplex Unit Cover

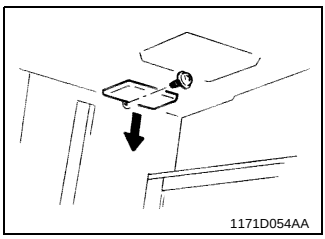


Using a soft cloth dampened with alcohol, wipe the Duplex Unit Cover.

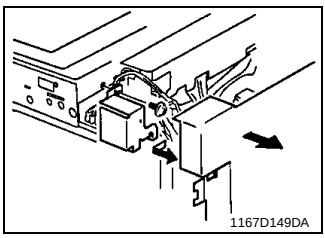
2-4. OPTICAL SECTION

(1) Removal of the IR Unit

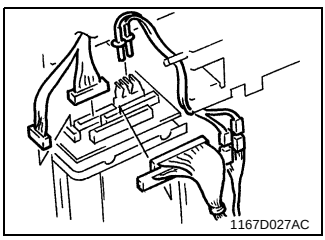
1. Remove the Original Cover, Front Holding Bracket, Upper Front Left Cover, Front Cover, Front Upper Cover, Rear Right IR Cover, Rear Left IR Cover, Rear Lower Cover, Rear Upper Cover, and Front Inside Cover.



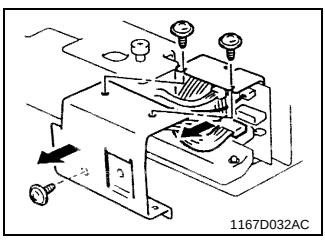
2. Remove one screw and the Motor Cover.



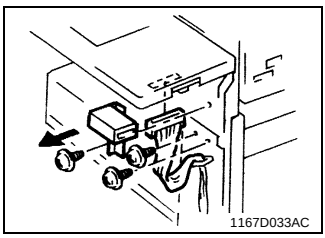
3. Remove the Shielding Plate. (U.S.A. and Canada only)
4. Remove one screw and the Harness Cover.



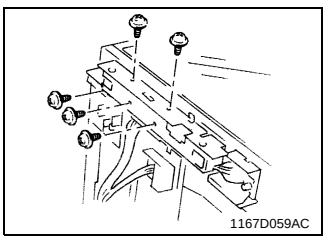
5. Unplug eight connectors of the HGB Board.



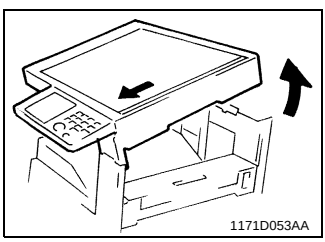
6. Remove three screws and the Harness Cover.
7. Unplug one connector of the BCR Board.



8. Remove one screw and the Total Counter Mounting Bracket Assy.
9. Unplug one connector of the Control Panel.
10. Remove two screws that secure the front end of the frame.



11. Remove five screws that secure the rear end of the frame.

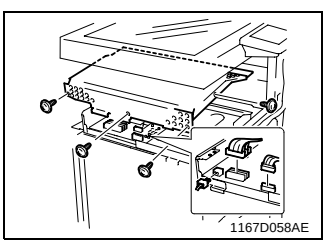


12. Raise the rear end of the IR Unit and pull the unit out toward front.

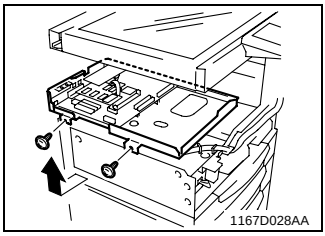
(2) Removal of the PH Unit

NOTES

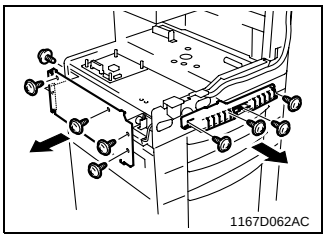
- *Do not place the PH Unit upside down or subject it to excessive shock.*
- *Replace the PH Unit as one unit.*
- *NEVER attempt to disassemble or adjust the PH Unit.*
- *Whenever the PH Unit has been removed, make the following adjustments: Edge Erase, Registration (CD, FD) (Printer), Registration (IR).*



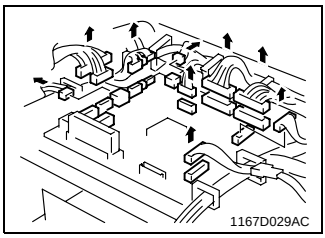
1. Remove the Upper Cover, Front Cover, Left Cover, and Rear Cover.
2. Remove four screws and the MFB Box Cover.
3. Unplug five connectors of the MFB Board.



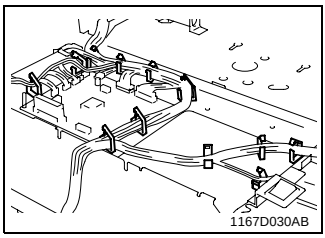
4. Remove two screws and the MFB Box Assy.



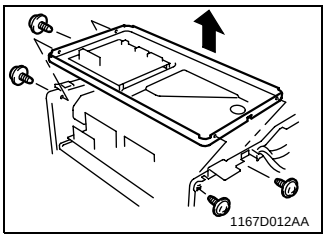
5. Remove five screws and the Reinforcement Bracket.
6. Remove four screws and the handle.



7. Unplug all connectors (13) from Master Board PWB-A.

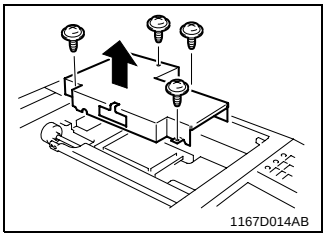


8. Remove the harness from all cord clamps (12) on the PH Base Plate.



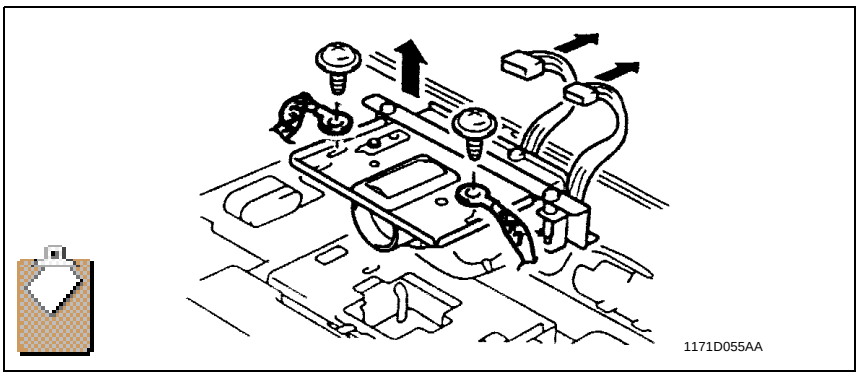
9. Remove four screws and the PH Unit.

(3) Removal of the CCD Unit



1. Remove the Original Glass.
2. Remove four screws and the Cover.

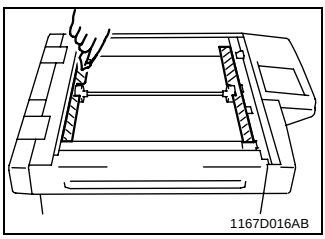
3. Unplug two connectors of the CCD Unit.
4. Remove two screws and the CCD Unit.



NOTES

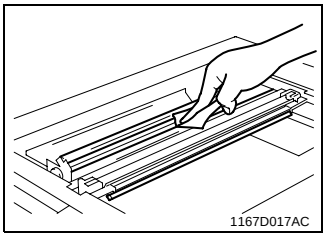
1. When removing the CCD Unit, remove only those screws and parts that are specified. (Remove the CCD Unit as one unit.)
2. Whenever the CCD Unit has been replaced, make the following adjustment: FD of Zoom Adjust (IR).

(4) Cleaning of the Scanner Rails/Bushings



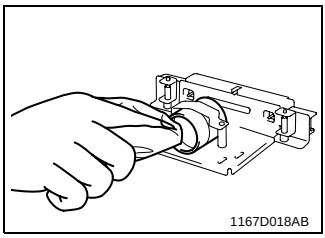
1. Remove the Original Glass.
2. Using a soft cloth, wipe clean the Scanner Rails and Bushings.

(5) Cleaning of the Mirrors



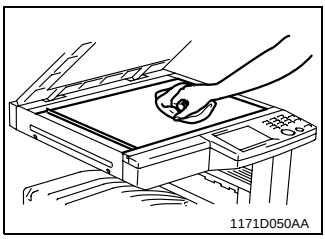
1. Remove the Original Glass.
2. Wipe clean the Mirrors with a soft cloth.

(6) Cleaning of the Lens



1. Remove the CCD Unit.
2. Wipe clean the Lens with a soft cloth.

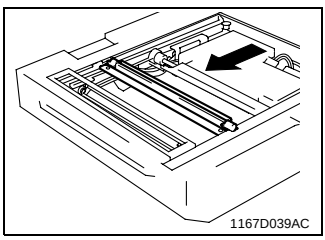
(7) Cleaning of the Original Glass



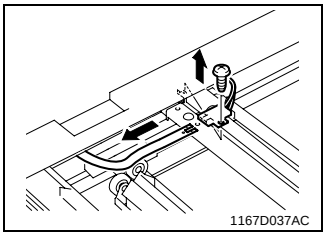
Wipe clean the Original Glass with a soft cloth.

(8) Removal of the Scanner

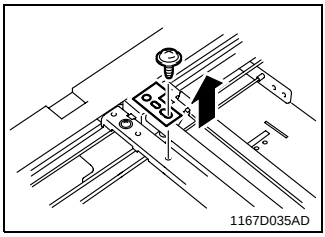
1. Remove the Original Glass.
2. Remove the Rear Holding Bracket.



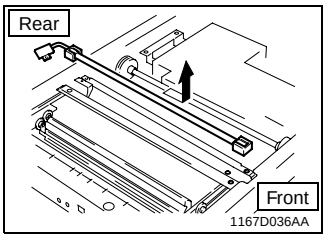
3. Slide the Scanner to the position shown.



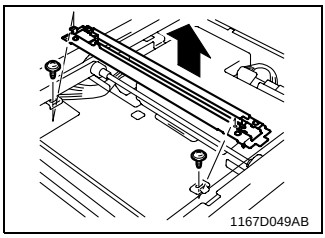
4. Remove one screw and unplug the connector of the Exposure Lamp.
5. Remove the flat cable of the Exposure Lamp.



6. Remove one screw and the Lamp Fixing Bracket.



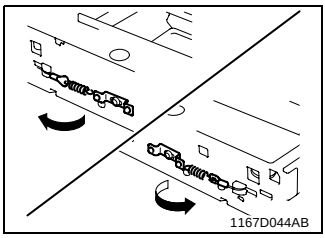
7. Slide the Exposure Lamp to the front and remove it.



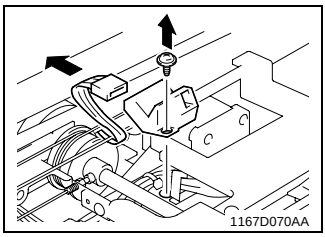
8. Remove two screws and the Scanner.

(9) Removal of the Scanner Drive Cables

1. Remove the Original Glass and ADF Glass Assy.
2. Remove the Left IR Cover.
3. Remove the Scanner.

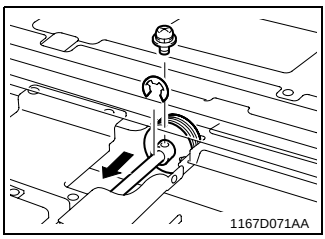


4. Unhook the spring of the cable on the hook side, one each at the front and in the rear.

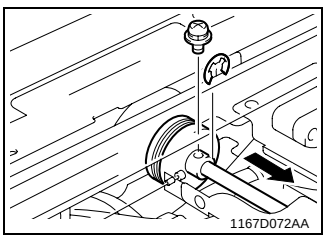


5. Remove one screw and the Original Size Detection Sensor.

✻ Inch Areas Option.



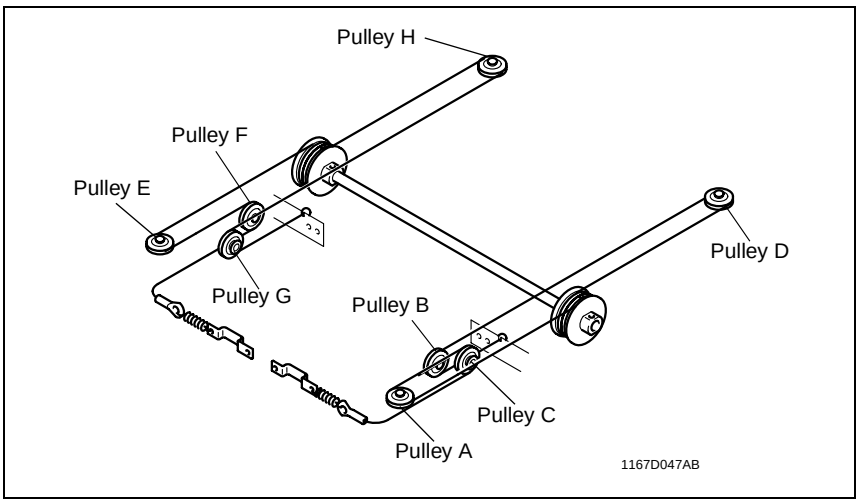
6. Snap off one E-ring and remove one mounting screw from the front pulley and slide the pulley to the rear.

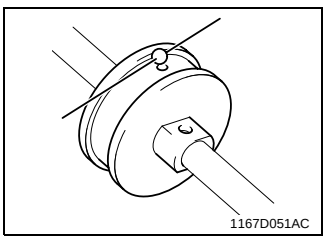


7. Snap off one E-ring and remove one mounting screw from the rear pulley and slide the pulley to the front.

8. Remove the Scanner Drive Cable, hook end first.

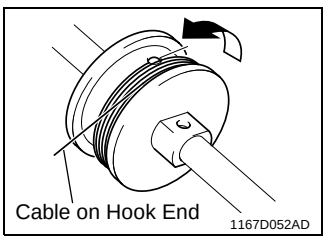
(10) Winding of the Scanner Drive Cables



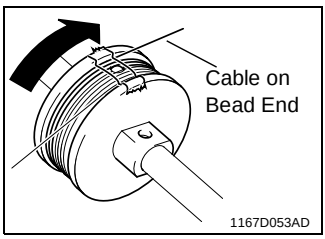


Front

1. Position the round bead of the Scanner Drive Cable in the pulley as shown.

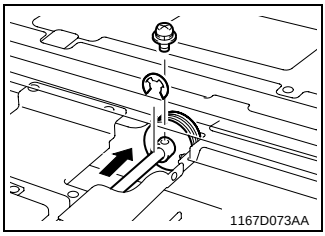


2. Wind the hook end of the Scanner Drive Cable two turns counterclockwise from the rear side to the front.

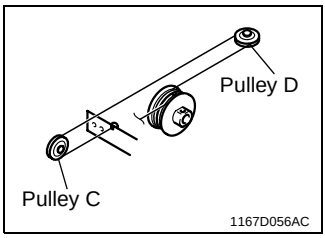


3. Wind the bead end of the cable four turns clockwise from the front to the rear. Then, secure the cable with tape.

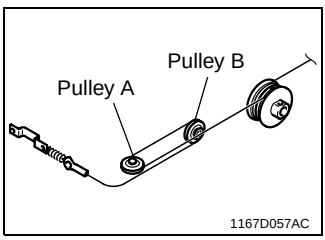
NOTE
Make sure that no part of the cable rides on the other.



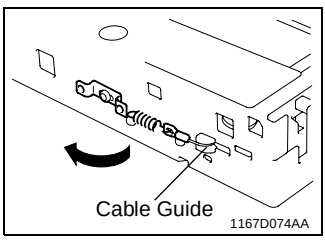
4. Slide the pulley to the front and install one mounting screw and one E-ring.



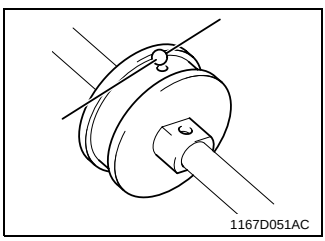
5. Wind the bead end of the cable around pulley D and pulley C, then hook the bead onto the Adjustable Anchor.



6. Wind the hook end of the cable around pulley A and pulley B.

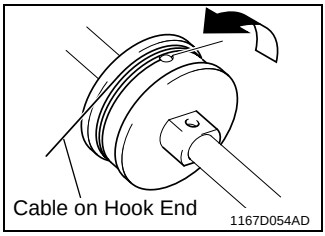


7. Fit the hook end of the cable into the groove in the Cable Guide and hook the spring.

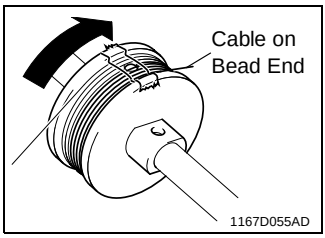


Rear

8. Position the round bead of the Scanner Drive Cable in the pulley as shown.

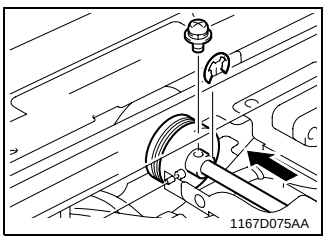


9. Wind the hook end of the cable two turns counter-clockwise from the front to the rear.

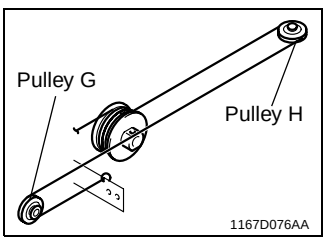


10. Wind the bead end of the cable four turns clockwise from the rear to the front. Then, secure the cable with tape.

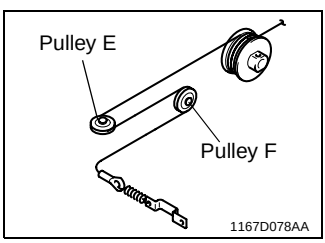
NOTE
Make sure that no part of the cable rides on the other.



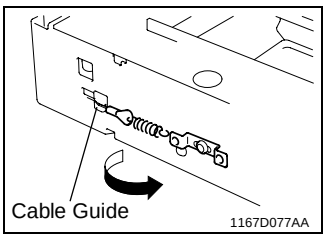
11. Slide the pulley toward the rear and install one mounting screw and one E-ring.



12. Wind the bead end of the cable around pulley H and pulley G and hook the bead onto the Adjustable Anchor.



13. Wind the hook end of the cable around pulley E and pulley F.



14. Fit the hook end of the cable into the groove in the Cable Guide and hook the spring.

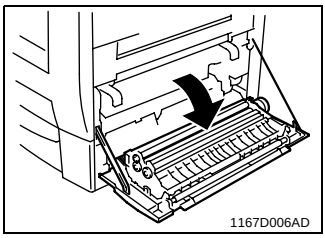
15. Peel off the tape from the pulleys at the front and rear.
16. Mount the Scanner.
17. Mount the Original Size Detection Sensor.
18. Reinstall the Left IR Cover.
19. Reinstall the Original Glass and ADF Glass Assy.
20. Perform the Focus-Positioning of the Scanner and 2nd/3rd Mirrors Carriage.
    (For details, see ADJUSTMENT.)

NOTE

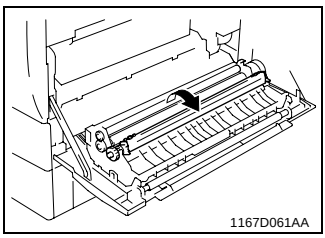
Whenever the Scanner Drive Cables have been removed, be sure to make the following adjustment: CD of Zoom Adjust (IR).

2-5. IMAGE TRANSFER SECTION

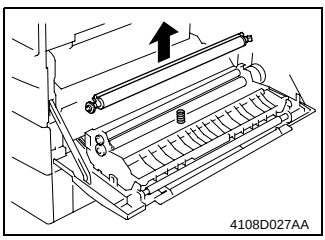
(1) Removal of the Image Transfer Roller



1. Open the Side Cover.



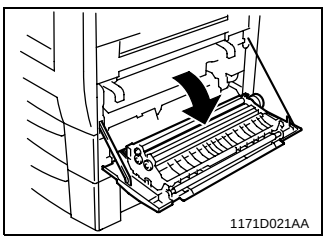
2. Raise the Image Transfer Guide Plate.



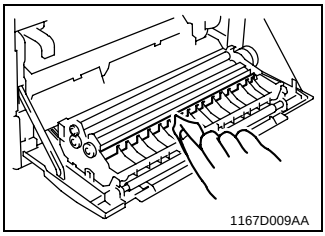
3. Remove the Image Transfer Roller and replace it.

NOTE
Do not touch the surface of the Image Transfer Roller directly with bare hands.

(2) Cleaning of the Comb Electrode



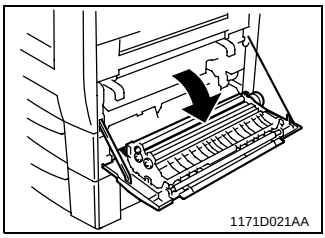
1. Open the Side Cover.



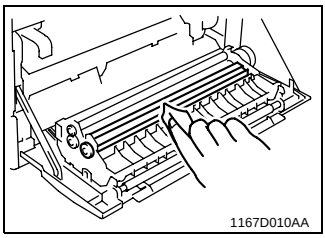
2. Using a soft cloth dampened with alcohol, wipe the Comb Electrode.

NOTES
- *Make sure the alcohol does not touch the surface of the Image Transfer Roller.*
- *When wiping the Comb Electrode, make sure the cloth is not caught by the ends of the combs.*

(3) Cleaning of the Pre-Image Transfer Guide Plate



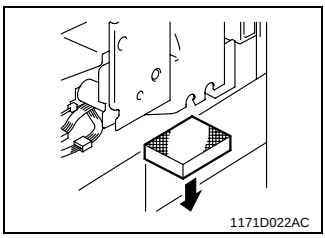
1. Open the Side Cover.



2. Using a soft cloth dampened with alcohol, wipe the Pre-Image Transfer Guide Plate.

NOTE
Make sure the alcohol does not touch the surface of the Image Transfer Roller.

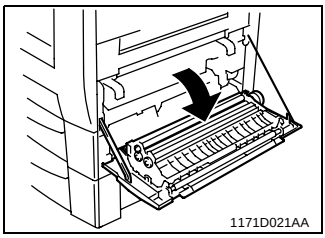
(4) Replacement of the Ozone Filter



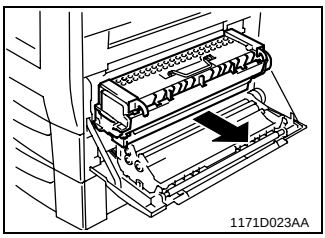
1. Remove the Rear Lower Cover.
2. Pull out the Ozone Filter and replace it.

2-6. DEVELOPING SECTION

(1) Removal of the Imaging Cartridge



1. Open the Side Cover.

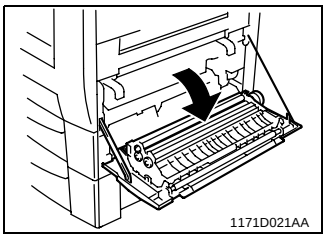


2. Holding onto the green handles, slide the Imaging Cartridge part of the way out.
3. Then grasp the handle on top of the cartridge and pull the cartridge out.

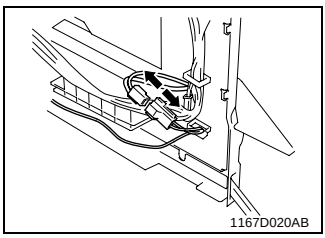
NOTE
When installing the Imaging Cartridge, push it all the way into the machine.
If the cartridge is not properly installed, the PC Drum protective shutter of the cartridge may not be opened or may even be damaged.

2-7. FUSING SECTION

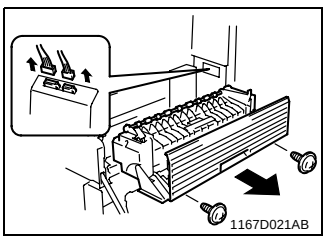
(1) Removal of the Fusing Unit



1. Open the Side Cover.

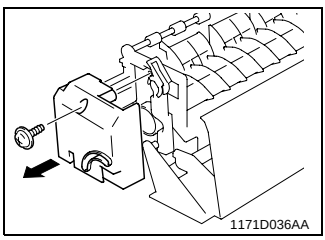


2. Remove the Front Cover.
3. Unplug one connector at the front.

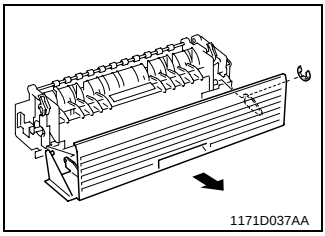


4. Open the Exit Cover and unplug two connectors in the rear.
5. Close the Exit Cover and remove two screws and the Fusing Unit.

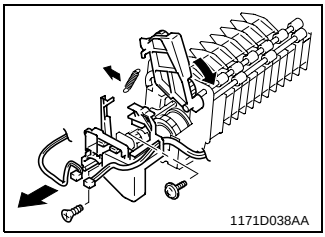
(2) Removal of the Fusing Roller Heater Lamp, Fusing Right Roller, Fusing Left Roller, Fusing Roller Thermistor, Fusing Roller Thermostat, and Fusing Roller Heater Lamp Fuse



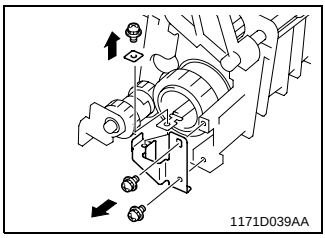
1. Open the Exit Cover.
2. Remove one screw and the Fusing Front Cover.



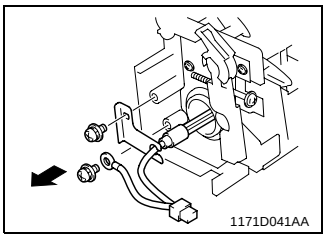
3. Snap off one E-ring and remove the Exit Cover.



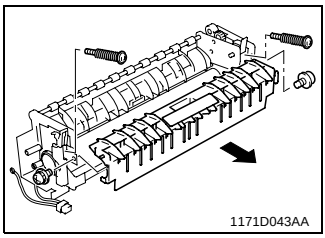
4. Unhook one spring to free the Idle Lever.
5. Remove two harnesses.
6. Remove two screws and the Rear Cover.



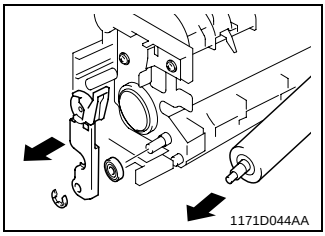
7. Remove three screws and the rear Lamp Holder.



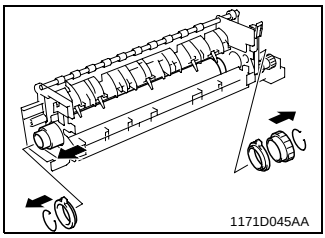
8. Remove one screw and the front Lamp Holder.
9. Remove one screw and the Fusing Roller Heater Lamp.



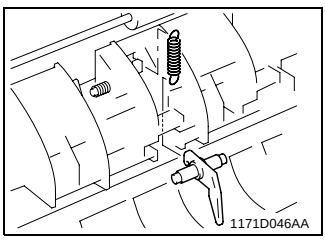
10. Remove two screws and the Fusing Rear Guide Assy.
11. Remove two pressure springs.



12. Snap off one E-ring and remove the front Misfeed Clearing Lever Assy and bearing.
13. Remove the Fusing Right Roller.

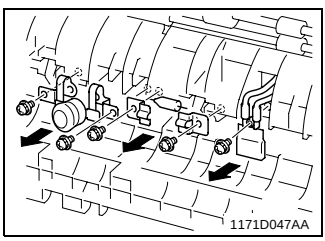


14. Snap off two retaining rings.
15. Remove one gear and two bushings.
16. Remove the Fusing Left Roller.



NOTE

When the Fusing Left Roller is removed, it can cause the spring to come off the Separator Finger. After the Fusing Left Roller has later been reinstalled, be sure to hook the spring onto the Separator Finger.

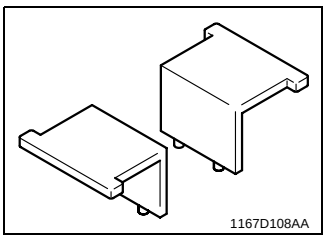


17. Remove one screw and the Fusing Roller Thermistor.
18. Remove two screws and the Fusing Roller Heater Lamp Fuse.
19. Remove two screws and the Fusing Roller Thermostat.

3 ADJUSTMENT

3-1. ADJUSTMENT JIGS AND TOOLS USED

1. Scanner/Mirrors Carriage Positioning Jigs

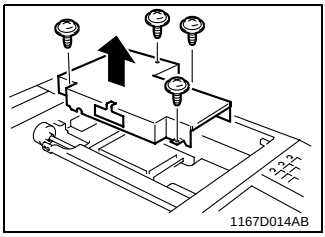


3-2. ADJUSTMENT REQUIREMENT LIST

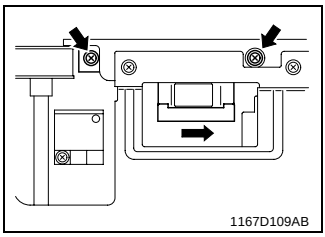
Adjustment Item	Requirements	Adjustment Point	Ref. Page
Touch Panel Adj.	Automatically adjusted	Control Panel	D-32
Original Size Detecting Sensor Adjustment	↑	↑	D-33
Loop Adjustment	—	↑	D-34
Edge Erase			
Leading	—	↑	D-35
Trailing	—	↑	D-36
Right/Left	—	↑	D-37
Registration (CD) (Printer)	10 ± 2.0 mm	↑	D-38
Registration (FD) (Printer)	↑	↑	D-40
Registration (IR)			
CD	↑	↑	D-42
FD	↑	↑	D-44
Zoom Adjust (IR)			
CD	200 ±1.0 mm	↑	D-46
FD	300 ±1.5 mm	↑	D-48
IR-Erasure Width	—	↑	D-50

3-3. ADJUSTMENT OF BELT TENSION

- Adjustment of the Scanner Motor Timing Belt



1. Remove the Original Glass.
2. Remove four screws and the Cover.



3. Loosen the two screws that secure the Scanner Motor. Using a bar tension gage, pull the motor to the right with a tension of 1000 g ±50 g and, at the same time, tighten the mounting screws.

NOTE

After the adjustment, turn the timing belt to check that the belt teeth are in mesh with the pulley grooves.

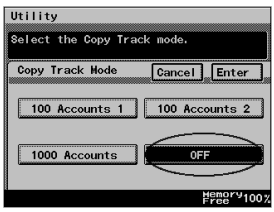
3-4. TEST PRINT

NOTES

This function is used to make the following electrical and image adjustments:

- *Registration (CD) (Printer)*
- *Registration (FD) (Printer)*
- *Registration (IR)*
- *Zoom Adjust (IR)*

◎ Adjustment Procedure



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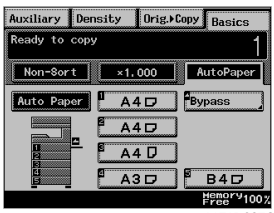
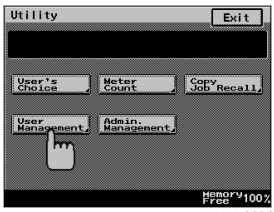
1. Check that “Copy Track Mode” of “Copy Track” under “Admin. Management” available from “Utility” is “OFF.”



1171D027CA

2. Select the paper source for the test print.



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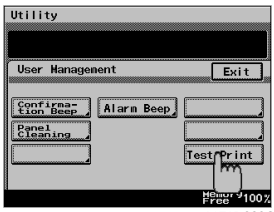
3. Press the Utility key on the control panel and touch [User Management].



1171D029CA

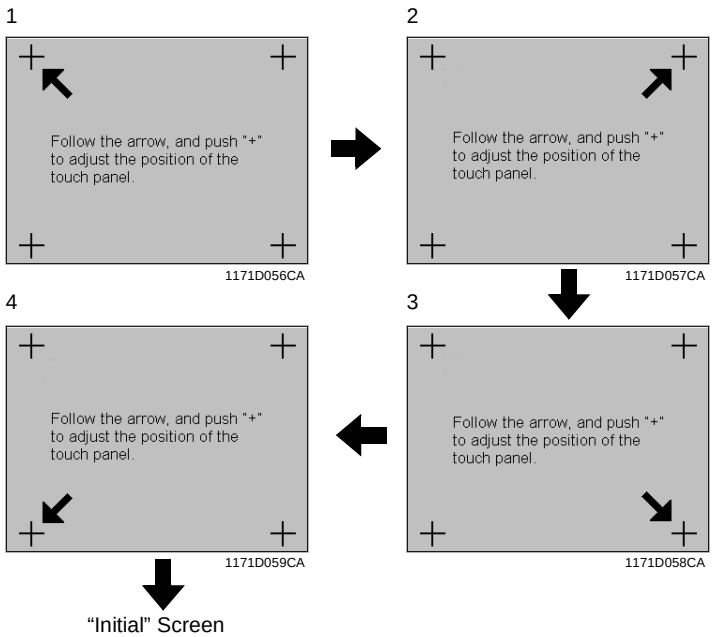
4. Touch [Test Print] to produce a test pattern.

3-5. ELECTRICAL/IMAGE ADJUSTMENT

(1) Touch Panel Adj.

NOTE
Make this adjustment after either of the following procedures have been performed:
- *Memory Clear*
- *Control Panel replacement*

◎ Adjustment Procedure
1. Call the Initial mode to the screen. (For details, see SWITCHES ON PWBs, TECH. REP. SETTINGS.)
2. Touch [Touch Panel Adj.].


1
Follow the arrow, and push "+" to adjust the position of the touch panel.
1171D056CA
2
Follow the arrow, and push "+" to adjust the position of the touch panel.
1171D057CA
3
Follow the arrow, and push "+" to adjust the position of the touch panel.
1171D058CA
4
Follow the arrow, and push "+" to adjust the position of the touch panel.
1171D059CA
"Initial" Screen

3. Touch + on screen 1.

NOTE
At this time, ensure that the very center of "+" is touched using the tip of a ballpoint pen or similar device.

4. Touch + on screen 2.
5. Touch + on screen 3.
6. Touch + on screen 4.

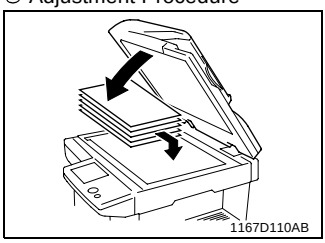
(2) Original Size Detecting Sensor Adjustment (F7-1)

NOTE

Make this adjustment after any of the following procedures have been performed:

- *Memory Clear*
- *A faulty original size detection occurs*
- *Replacement of the CCD Unit and Scanner parts (including the Exposure Lamp)*
- *RAM Board replacement*

◎ Adjustment Procedure



1. Stack five sheets of blank A3 or 11” × 17” paper on the Original Glass and lower the Original Cover.
2. Call the Tech. Rep. mode to the screen.
3. Touch [Function] to call the Function menu.
4. Touch F7-1 Original Size Detecting Sensor Adjustment.
5. Press the Start key to run the Original Size Detecting Sensor Adjustment function.

NOTE

The Start key remains lit up orange while this function is being run and lights up green as soon as the sequence is completed.

(3) Loop Adjustment

Requirement

Adjust so that a correct loop is formed before the Synchronizing Rollers when paper is fed through.

Adjust Mode	Setting Value
Loop Adjustment	-5 to +5

NOTE

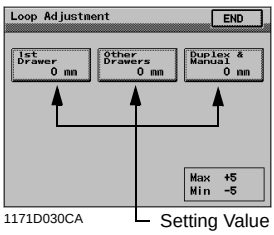
This adjustment is to be made when any of the following symptoms occurs: variations in the amount of print leading edge void, paper skew, and misfeed.

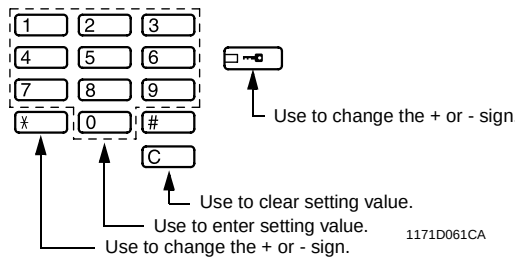
◎ Adjustment Procedure

1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice], then [Printer].
3. Touch [Loop Adjustment] to enter the Loop Adjustment mode.
4. Select the paper source for which the adjustment is to be made.
5. Press the Clear key to clear the current setting.
6. Enter the new setting value from the 10-Key Pad.

Setting Instructions

Change the setting value as necessary until there are no variations in the amount of void image along the leading edge, skewed feeding, dog-ear, or misfeed.





7. Touch the [END] key to validate the setting value.

Caution

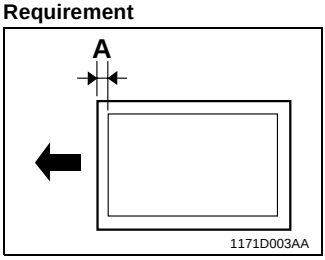
Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

8. Perform the same steps to adjust for the other paper sources.

(4) Edge Erase

1. Leading

Requirement



Adjust so that the erase width on the leading edge falls within the range of 0 to 5 mm.

Adjust Mode	Setting Range
Edge Erase/Leading	0 to 5

NOTE

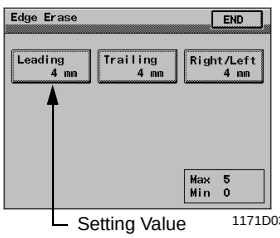
This adjustment must be made when the PH Unit has been replaced and after Registration (CD/FD) (Printer) has been made.

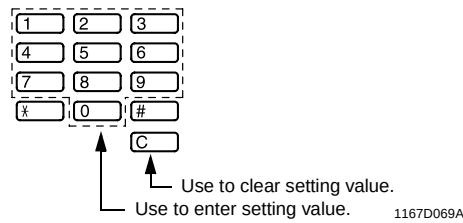
◎ Adjustment Procedure

1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice], then [Printer].
3. Touch [Edge Erase] and then [Leading] to enter the Leading Edge Erase adjustment mode.
4. Press the Clear key to clear the current setting.
5. Enter the new setting value from the 10-Key Pad.

Setting Instructions

To make the edge erase width smaller, decrease the setting value.
To make the edge erase width greater, increase the setting value.





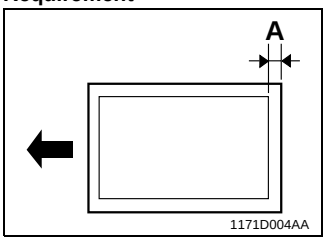
6. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

2. Trailing

Requirement



Adjust so that the erase width on the trailing edge falls within the range of 0 to 5 mm.

Adjust Mode	Setting Range
Edge Erase/Trailing	0 to 5

NOTE

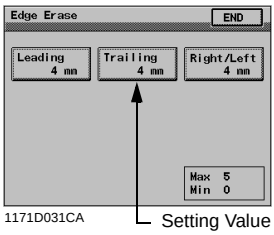
This adjustment must be made when the PH Unit has been replaced and after Registration (CD/FD) (Printer) has been made.

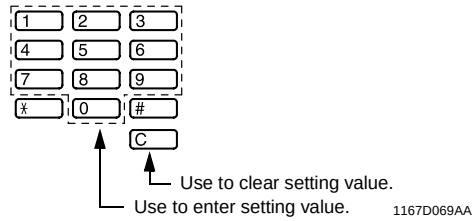
◎ Adjustment Procedure

1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice], then [Printer].
3. Touch [Edge Erase] and then [Trailing] to enter the Trailing Edge Erase adjustment mode.
4. Press the Clear key to clear the current setting.
5. Enter the new setting value from the 10-Key Pad.

Setting Instructions

To make the edge erase width smaller, decrease the setting value.
To make the edge erase width greater, increase the setting value.





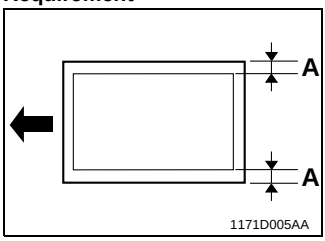
6. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

3. Right/Left

Requirement



Adjust so that the erase width on the right/left edge falls within the range of 0 to 5 mm.

Adjust Mode	Setting Range
Edge Erase/Right/Left	0 to 5

NOTE

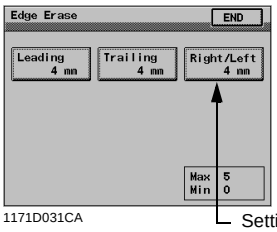
This adjustment must be made when the PH Unit has been replaced and after Registration (CD) (Printer) have been made.

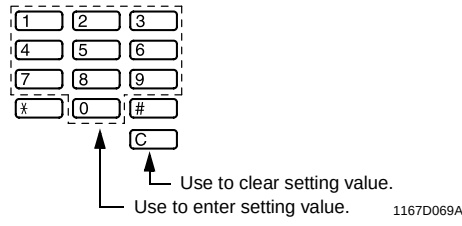
◎ Adjustment Procedure

1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice], then [Printer].
3. Touch [Edge Erase] and then [Right/Left] to enter the Right/Left Edge Erase adjustment mode.
4. Press the Clear key to clear the current setting.
5. Enter the new setting value from the 10-Key Pad.

Setting Instructions

To make the edge erase width smaller, decrease the setting value.
To make the edge erase width greater, increase the setting value.





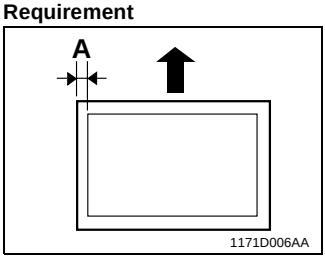
6. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

(5) Registration (CD) (Printer)

Requirement



Adjust so that width A on the test pattern output falls within the following range.

Specification	Adjust Mode	Setting Range
1-Sided: 10 ±2.0 mm 2-Sided: 10 ±3.0 mm	Registration (CD)	-4.0 to +4.0

NOTE

This adjustment must be made when the PH Unit has been replaced and, for 2-sided, after Registration (CD) (Printer) for each paper source for 1-sided and Registration (FD) (Printer) have been made.

◎ Adjustment Procedure

1. Produce a test pattern. (For details, see 3-4. TEST PRINT.)
2. 1-Sided: Check to see if width A on the test pattern meets the specifications.
   2-Sided: Using the test pattern output as the original, make an ordinary 2-sided copy. Check to see if width A on the second side of the 2-sided copy meets the specifications.

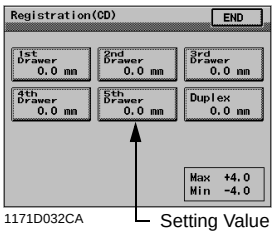
   If width A falls outside the specified range, perform these steps to make the adjustment.

3. Call the Adjust mode to the screen.
4. Touch [Printer] and [Registration (CD)], in that order.
5. Select the paper source for which the adjustment is to be made.
6. Press the Clear key to clear the current setting.
7. Enter the new setting value from the 10-Key Pad.

Setting Instructions

If width A is wider than specifications, make the setting value smaller than the current one. If width A is narrower than specifications, make the setting value greater than the current one.

✻ If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.



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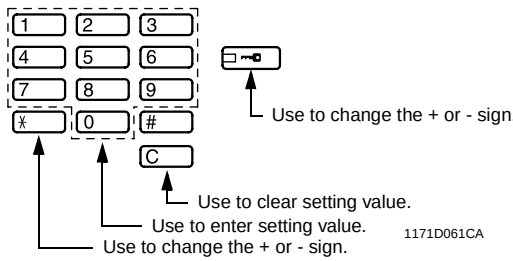

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8. Touch the [END] key to validate the setting value.

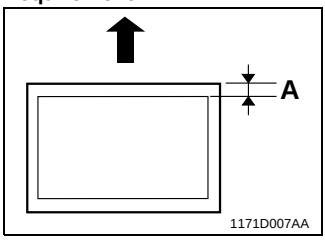
Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

9. Perform the same steps to adjust for the other paper sources.

(6) Registration (FD) (Printer)

Requirement



Adjust so that width A on the test pattern output falls within the following range.

Specification	Adjust Mode	Setting Range
10 ±2.0 mm	Registration (FD)	-19 to +19

NOTE

This adjustment must be made when the PH Unit has been replaced and after Registration (CD) (Printer) has been made.

◎ Adjustment Procedure

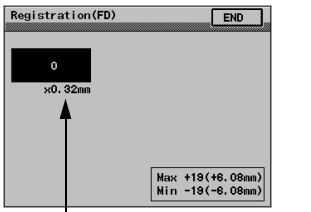
1. Produce a test pattern. (For details, see 3-4. TEST PRINT.)
2. Check to see if width A on the test pattern meets the specifications.
   If width A falls outside the specified range, perform these steps to make the adjustment.

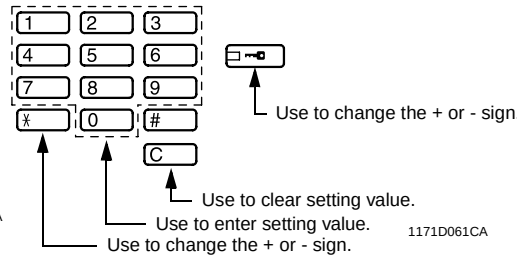
3. Call the Adjust mode to the screen.
4. Touch [Printer] and [Registration (FD)], in that order.
5. Select the paper source for which the adjustment is to be made.
6. Press the Clear key to clear the current setting.
7. Enter the new setting value from the 10-Key Pad.

Setting Instructions

If width A is wider than specifications, make the setting value smaller than the current one. If width A is narrower than specifications, make the setting value greater than the current one.

✻ If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.





8. Touch the [END] key to validate the setting value.

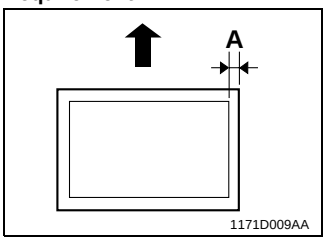
Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

(7) Registration (IR)

1. CD

Requirement



Place the test pattern output after the adjustments of Registration (CD and FD) (Printer) have been completed on the Original Glass and make a copy of it. Adjust so that width A on the test pattern copy falls within the following range.

Specification	Adjust Mode	Setting Range
10 ±2.0 mm	Registration (CD)	-127 to +127

NOTE

This adjustment must be made when the PH Unit has been replaced and after the adjustments of Registration (CD and FD) (Printer) and CD of Zoom Adjust (IR) have been made.

◎ Adjustment Procedure

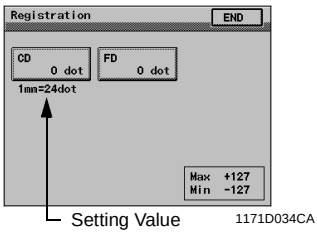
1. After the adjustments of Registration (CD and FD) (Printer) and CD of Zoom Adjust (IR) have been completed, produce a test pattern. (For details, see 3-4. TEST PRINT.)
2. Place the test pattern output on the Original Glass and make a copy of it.
3. Check to see if width A on the test pattern copy meets the specifications.
   If width A falls outside the specified range, perform these steps to make the adjustment.

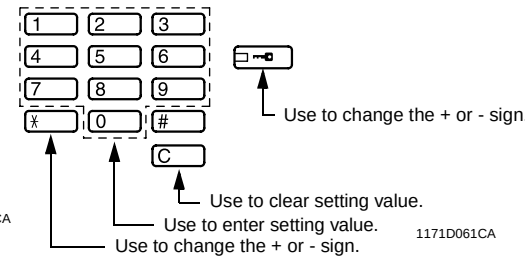
4. Call the Adjust mode to the screen.
5. Touch [IR], [Registration], and [CD], in that order.
6. Press the Clear key to clear the current setting.
7. Enter the new setting value from the 10-Key Pad.

Setting Instructions

If width A is wider than specifications, make the setting value smaller than the current one.
If width A is narrower than specifications, make the setting value greater than the current one.

✻ If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.





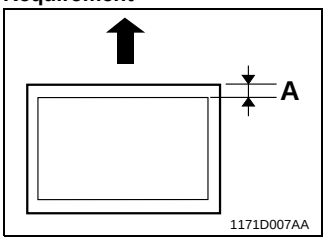
8. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

2. FD

Requirement



Place the test pattern output after the adjustments of Registration (CD and FD) (Printer) have been completed on the Original Glass and make a copy of it. Adjust so that width A on the test pattern copy falls within the following range.

Specification	Adjust Mode	Setting Range
10 ±2.0 mm	Registration (FD)	-127 to +127

NOTE

This adjustment must be made when the PH Unit has been replaced and after the adjustments of Registration (CD and FD) (Printer) and FD of Zoom Adjust (IR) have been made.

◎ Adjustment Procedure

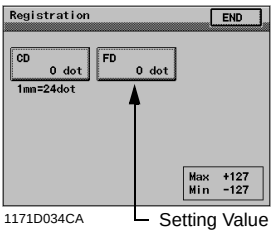
1. After the adjustments of Registration (CD and FD) (Printer) and FD of Zoom Adjust (IR) have been completed, produce a test pattern. (For details, see 3-4. TEST PRINT.)
2. Place the test pattern output on the Original Glass and make a copy of it.
3. Check to see if width A on the test pattern copy meets the specifications.
   If width A falls outside the specified range, perform these steps to make the adjustment.

4. Call the Adjust mode to the screen.
5. Touch [IR], [Registration], and [FD], in that order.
6. Press the Clear key to clear the current setting.
7. Enter the new setting value from the 10-Key Pad.

Setting Instructions

If width A is wider than specifications, make the setting value smaller than the current one.
If width A is narrower than specifications, make the setting value greater than the current one.

✻ If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.



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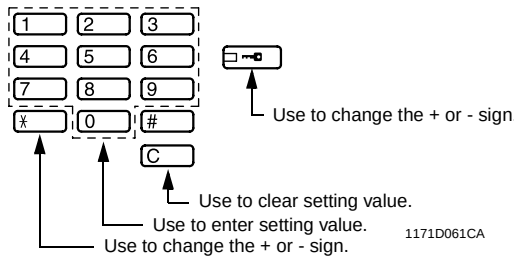

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8. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

(8) Zoom Adjust (IR)

1. CD

Requirement

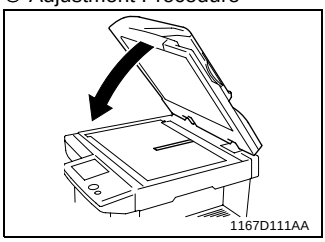
1. The difference should be within ±1.0% of the actual length.
2. Adjust so that the following specifications are satisfied with a scale length of 300 mm.

Zoom Ratio	Specification	Adjust Mode	Setting Range
Full size (×1.000)	300 ±3.0 mm	Zoom Adjust (CD)	0.990 to 1.010

NOTE

This adjustment must be made when the Scanner Drive Cables have been replaced and after the adjustments of Registration (CD and FD) (Printer) have been made.

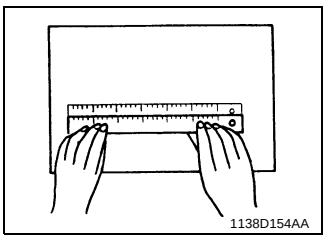
◎ Adjustment Procedure



1. Place a scale in parallel with the Original Width Scale and make a copy. (Note that the scale is perpendicular to the Original Length Scale.)

✻ Use the full size (×1.000) mode and A3 or 11" × 17" paper.

✻ If the scale is of plastic and transparent, place a blank sheet of paper over it.



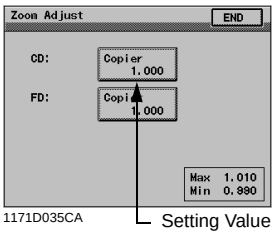
2. Measure the length of the scale on the copy to find the difference.

✻ If the difference is outside the specification, adjust by following the procedure shown below.

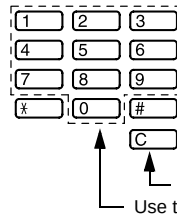
3. Call the Adjust mode to the screen.
4. Touch [IR], [Zoom Adjust], and [CD], in that order.
5. Press the Clear key to clear the current setting.
6. Enter the new setting value from the 10-Key Pad.

Setting Instructions

If the scale on the copy is longer than the actual scale, decrease the setting value.
If the scale on the copy is shorter than the actual scale, increase the setting value.
✻ If the measurement does not fall within the specifications through one setting, try another setting.



1171D035CA



1167D069AA

7. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

2. FD

Requirement

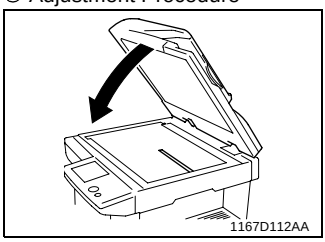
1. The difference should be within ±1.0% of the actual length.
2. Adjust so that the following specifications are satisfied with a scale length of 200 mm.

Zoom Ratio	Specification	Adjust Mode	Setting Range
Full size (×1.000)	200 ±2.0 mm	Zoom Adjust (FD)	0.990 to 1.010

NOTE

This adjustment must be made when the CCD Unit has been replaced and after the adjustments of Registration (CD and FD) (Printer) have been made.

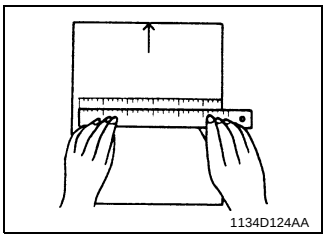
◎ Adjustment Procedure



1. Place a scale in parallel with the Original Length Scale and make a copy.

✻ Use the full size (X1.000) mode and paper with a width of 200 mm or more.

✻ If the scale is of plastic and transparent, place a blank sheet of paper over it.



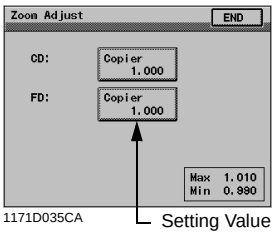
2. Measure the length of the scale on the copy to find the difference.

✻ If the difference is outside the specification, adjust by following the procedure shown below.

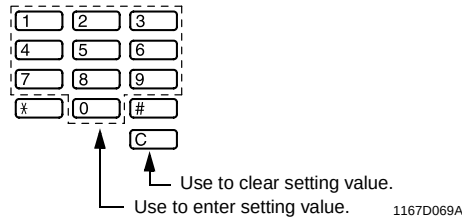
3. Call the Adjust mode to the screen.
4. Touch [IR], [Zoom Adjust], and [FD], in that order.
5. Press the Clear key to clear the current setting.
6. Enter the new setting value from the 10-Key Pad.

Setting Instructions

If the scale on the copy is longer than the actual scale, decrease the setting value.
If the scale on the copy is shorter than the actual scale, increase the setting value.
✻ If the measurement does not fall within the specifications through one setting, try another setting.



1171D035CA



1167D069AA

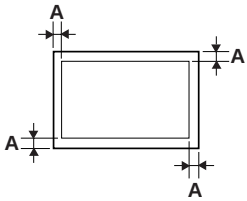
7. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operating mode. If the Panel Reset Key is used, the previous setting remains valid.

(9) IR-Erasure Width

Requirement



Set so that the erase width along four edges of the paper falls within the range of 0 to 3 mm.

Adjust Mode	Setting Range
IR-Erasure Width	0 to 3

NOTE

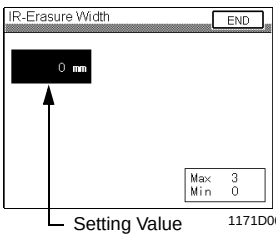
This adjustment must be made when a shadow is produced from the Original Scale.

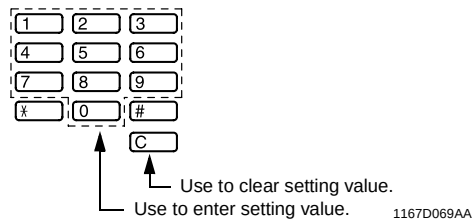
◎ Adjustment Procedure

1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice].
3. Touch [IR-Erasure Width] to enter the IR-Erasure Width mode.
4. Press the Clear key to clear the current setting.
5. Enter the new setting value from the 10-Key Pad.

Setting Instructions

To make the erase width along four edges of the paper smaller, decrease the setting value.
To make the erase width along four edges of the paper greater, increase the setting value.





6. Touch the [END] key to validate the setting value.

Caution

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

3-6. OTHER ADJUSTMENTS

- Focus-Positioning of the Scanner and 2nd/3rd Mirrors Carriage

NOTE

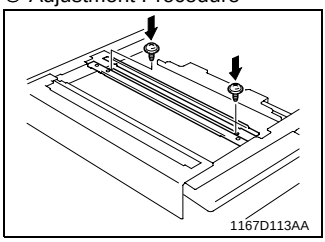
Make this adjustment after any of the following procedures has been performed:

- *After the Scanner Drive Cable has been replaced.*
- *When the Scanner Fixing Bracket has been removed from the Scanner Drive Cable.*
- *When the Scanner Drive Cable comes unwound.*

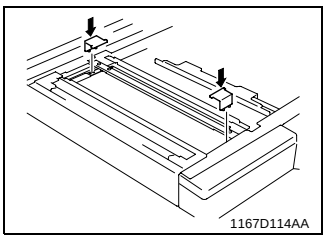
Requirement

With the Scanner fixed to the Scanner Drive Cables, there should be no gap between the Scanner/Mirrors Carriage Positioning Jig and the Scanner and also between the Scanner/ Mirrors Carriage Positioning Jig and the 2nd/3rd Mirrors Carriage.

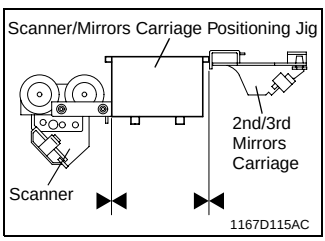
◎ Adjustment Procedure



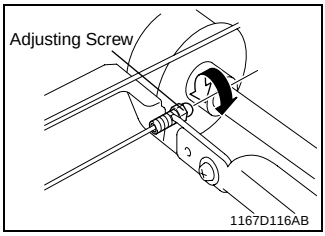
1. Remove the Exposure Lamp. (For details, see steps 1 through 7, (8) Removal of the Scanner, 2-4 OPTICAL SECTION.)
2. Temporarily loosen the set screws of the cable holding plate of the Scanner Drive Cable.



3. Fit the Scanner/Mirrors Carriage Positioning Jigs in the space between the Scanner and 2nd/3rd Mirrors Carriage.

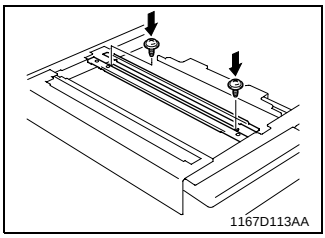


4. Press the Scanner up against the jig and 2nd/3rd Mirrors Carriage and, at the same time, tighten the set screws of the cable holding plate.

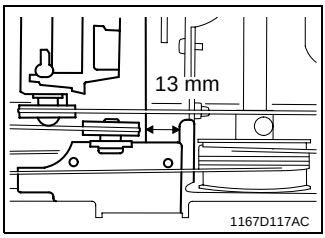


NOTE
If the Scanner does not run parallel with the 2nd/3rd Mirrors Carriage when the Scanner/Mirrors Carriage Positioning Jigs are in position, turn the adjusting screw for the rear Scanner Drive Cable as necessary.

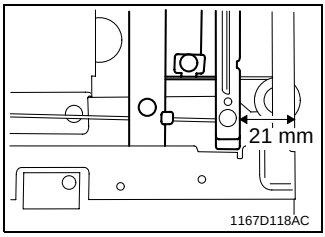
✻ If the Scanner/Mirrors Carriage Positioning Jigs are not available, follow these steps to make the adjustment.



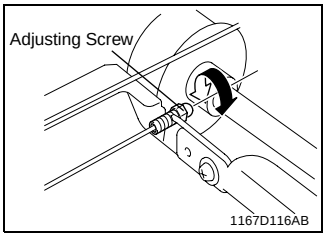
1. Temporarily loosen the set screws of the cable holding plate of the Scanner Drive Cable.



2. Obtain a distance of 13 mm between the 2nd/3rd Mirrors Carriage and rail.



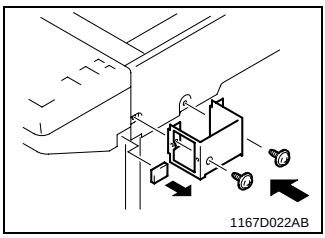
3. Secure the Scanner where it is located at a position 21 mm from the right side face.
4. Tighten the set screws of the cable holding plate.



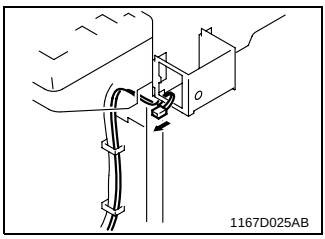
NOTE
If the Scanner does not run parallel with the 2nd/3rd Mirrors Carriage, turn the adjusting screw for the rear Scanner Drive Cable as necessary.

4 MISCELLANEOUS

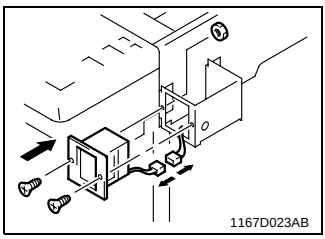
4-1. INSTALLATION OF THE KEY COUNTER SOCKET (OPTION)



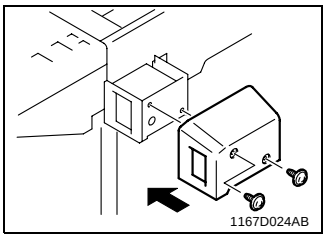
1. Remove the Front Cover.
2. Remove the knockout from the Front Upper Cover.
3. Using two screws, secure the Counter Mounting Bracket.



4. Route the harness of the Key Counter as shown.



5. Connect the Key Counter Socket connector.
6. Using one screw and one screw and nut, secure the counter socket.



7. Using two screws, secure the Key Counter Cover.

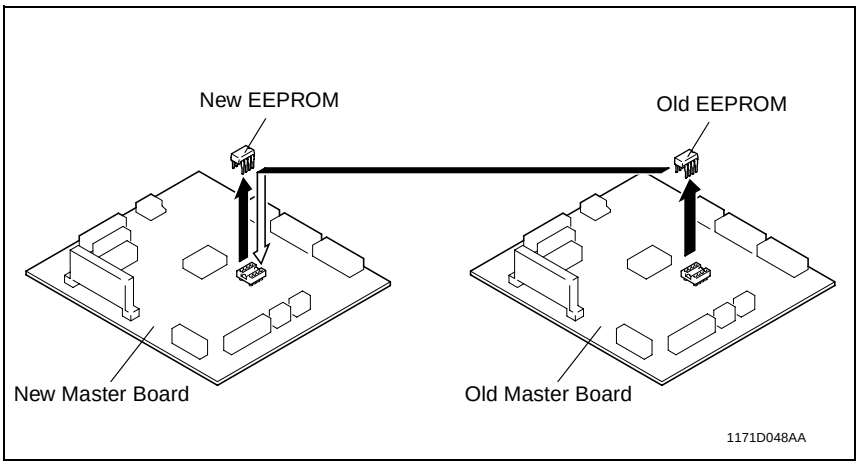
NOTE
When the Key Counter Socket is mounted, set to "ON" the "Key Counter" available from the Security mode.

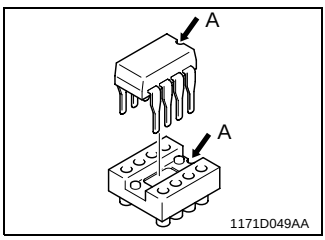
4-2. REMOUNTING THE EEPROM (IC3A)

NOTES

- *If the Imaging Cartridge is not to be replaced after the Master Board has been replaced with a new one, be sure to remount the EEPROM (IC3A) from the old to new Master Board.*
- *If the Master Board has been replaced with a new one and the EEPROM (IC3A) has not been remounted, be sure to replace the Imaging Cartridge with a new one. Because the EEPROM contains no data in this case, make settings and readjustments as necessary.*

1. Remove the Master Board. (For details, see 2-2. REMOVAL OF CIRCUIT BOARDS AND OTHER ELECTRICAL COMPONENTS.)
2. Demount the EEPROM (IC3A) from the new Master Board.
3. Demount the EEPROM (IC3A) from the old Master Board and remount it onto the new Master Board.





NOTE

Note the alignment notch on the EEPROM (IC3A) when mounting the IC.

Di350

TROUBLESHOOTING

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1 INTRODUCTION

1-1. General Precautions

1. When servicing the copier with its covers removed, use utmost care to prevent your hands, clothing, and tools from being caught in revolving parts including the chains and gears. When servicing the copier with the Rear Cover removed, be sure to fit the interlock switch actuating jig in position.
2. Before attempting to replace parts and unplug connectors, make sure that the power cord of the copier has been unplugged from the wall outlet.
3. Never create a closed circuit across connector pins except those specified in the text and on the printed circuit.
4. When creating a closed circuit and measuring a voltage across connector pins specified in the text, be sure to use the green wire (GND).
5. When the user is using a word processor or personal computer from a wall outlet of the same line, take necessary steps to prevent the circuit breaker from opening due to overloads.
6. Keep all disassembled parts in good order and keep tools under control so that none will be lost or damaged.

1-2. How to Use This Book

1. If a component on a PWB or any other functional unit including a motor is defective, the text only instructs you to replace the whole PWB or functional unit and does not give troubleshooting procedures applicable within the defective unit.
2. All troubleshooting procedures contained herein assume that there are no breaks in the harnesses and cords and all connectors are plugged into the right positions.
3. For the removal procedures of covers and parts, see DIS/REASSEMBLY, ADJUSTMENT.
4. The troubleshooting procedures are given in the order of greater frequency of trouble or order of operation.
5. The procedures preclude possible malfunctions due to noise and other external causes.

1-3. Reading the Text

1. The paper transport failure troubleshooting procedures are given according to the symptom. First identify the location where the paper is present and start the procedure for that particular location. For malfunction troubleshooting, start with step 1 and onward.
2. Make checks in numerical order of steps and, if an item is checked okay, go to the next step.

Pattern 1

Step	Check Item	Result	Action
1	Is--?	YES	Do this.
2		↑	

Go to step 2 if you answered No.

Pattern 2

Step	Check Item	Result	Action
1	Is--?	YES	Do this.
		NO	Check that.
2			↑

Go to step 2 if it checks okay.

2 I/O CHECK

2-1. Controlled Parts Check Procedure

To allow the Tech. Rep. to easily and safely determine whether a particular controlled part is fully operational, this copier provides the following provision: checking the data of the input port of the board IC with the copier in the standby state (including a misfeed, malfunction, and closure failure condition) allows the Tech. Rep. to determine whether signals are properly input to a controlled part.

<Procedure>
1. When a misfeed or malfunction occurs, locate on a circuit diagram accompanying the text the controlled part which is probably defective.
2. Select “I/O Check” from the Tech. Rep. Mode menu screen and then access the screen which contains the controlled part picked out in step 1 above. (See SWITCHES ON PWBs/TECH. REP. MODE.)
3. Check the input port data to determine if a signal is probably input to the controlled part.

<Controlled Part Check Procedure Through Checking Input Port Data>

Example
When a paper misfeed occurs in the paper take-up section of the copier, Synchronizing Roller Sensor PC2 is considered to be responsible for it.

<Procedure>
1. Remove the sheet of paper misfed.
2. From the I/O Check list, it is found that the signal input to PC2 is “Timing Roller.”
3. Select “I/O Check” from Tech. Rep. Mode and then “Printer.” Now, access the screen that contains “Timing Roller.”
4. Check that the input port data of “Timing Roller” is “0” (sensor is blocked).
5. Move the PC2 actuator to unblock the sensor.
6. Check at this time that the input port data on the screen changes from “0” to “1.”

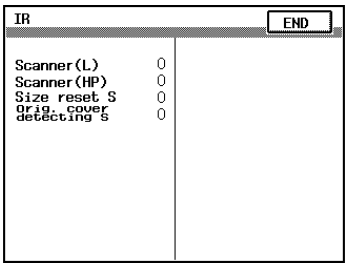
1: PC2 is operational. 0: PC2 is faulty.

2-2. I/O Check List

<I/O Check Screens>

- The following screens are only typical and the input data shown does not necessarily represent the actual one.

IR



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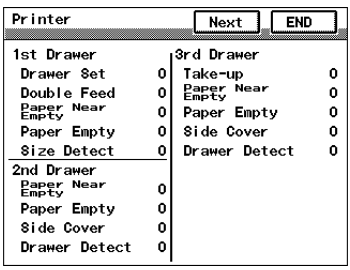
Printer



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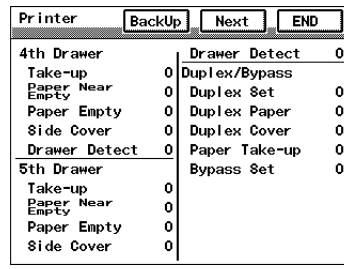
Backup

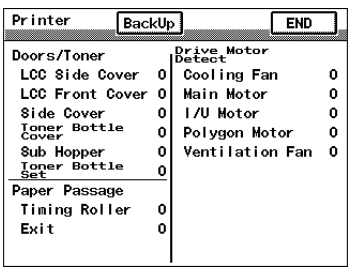
Next



1171T004CA

Next

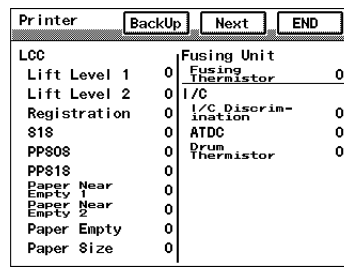
Backup



1171T006CA

Next

Backup



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<I/O Check List>

IR

Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.
			1	0				
PC13	Scanner (L)	Scanner Home Position Sensor 2	Blocked	Unblocked	HGB Board	—	——	CN7HGB-27
PC12	Scanner (HP)	Scanner Home Position Sensor 1	At home	Not at home		—	——	CN7HGB-26
S5	Size reset S	Size Reset Switch	When closed	When opened		—	——	CN7HGB-24
PC14	Orig. cover detecting S	Original Cover Detecting Sensor	Within 15°	15° or more		—	——	CN7HGB-25

Printer

Symbol	Panel Display		Parts/Signal Name		Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.
					1	0				
PC6	1st Drawer	Drawer Set	Cassette Set Sensor		In position	Out of position	Master Board PWB-A	IC1	PO1	PJ13A-5B
PWB-H		Double Feed	Double Feed Detecting Board		Blocked ✻1	Unblocked ✻1		IC1	PO2	PJ14A-8B
PC5		Paper Near Empty	Paper Near Empty Sensor		Unblocked	Blocked		IC1	PO3	PJ13A-2B
PC4		Paper Empty	Paper Empty Sensor		Paper not present	Paper present		IC1	PO5	PJ14A-13A
PWB-I		Size Detect	Paper Size Detecting Board		Analog value			IC1	P103/ AN3	PJ14A-1B to PJ14A-4B
S5	2nd Drawer	Paper Near Empty	Paper Near Empty Sensor		Unblocked	Blocked	Cassette Main Board PWB-A	IC1	P12	PJ3A-11B
S4		Paper Empty	Paper Empty Sensor		Paper not present	Paper present		IC1	P6	PJ3A-5B
S2		Side Cover	Side Cover Set Sensor		When opened	When closed		IC1	P9	PJ3A-8B
S1		Drawer Detect	Cassette Set Switch		In position: 2 displayed Out of position: 0 displayed			IC1	P11	PJ3A-12A
S3	3rd Drawer	Take-up	Take-Up Sensor		Paper present	Paper not present	Cassette Main Board PWB-A: PF-108/ PF-110	IC1	P5	PJ3A-2B
S5		Paper Near Empty	Paper Near Empty Sensor		Unblocked	Blocked		IC1	P12	PJ3A-11B
S4		Paper Empty	Paper Empty Sensor		Paper not present	Paper present		IC1	P6	PJ3A-5B
S2		Side Cover	Side Cover Set Sensor		When opened	When closed		IC1	P9	PJ3A-8B
S1		Drawer Detect	Cassette Set Switch	When PF-110 is used	In position	Out of position		IC1	P10	PJ3A-9A
				When PF-108 is used	In position: 2 displayed Out of position: 0 displayed			IC1	P11	PJ3A-12A

✻ 1: The display of 1 or 0 is selected only while Main Motor M2 is being energized.

Symbol	Panel Display		Parts/Signal Name		Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.
					1	0				
S3	4th Drawer	Take-up	Take-Up Sensor		Paper present	Paper not present	Cassette Main Board PWB-A: PF-108/ PF-110	IC1	P5	PJ3A-2B
S5		Paper Near Empty	Paper Near Empty Sensor		Unblocked	Blocked		IC1	P12	PJ3A-11B
S4		Paper Empty	Paper Empty Sensor		Paper not present	Paper present		IC1	P6	PJ3A-5B
S2		Side Cover	Side Cover Set Sensor		When opened	When closed		IC1	P9	PJ3A-8B
S1		Drawer Detect	Cassette Set Switch	When PF-110 is used	In position	Out of position		IC1	P10	PJ3A-9A
				When PF-108 is used	In position: 2 displayed Out of position: 0 displayed			IC1	P11	PJ3A-12A
S3	5th Drawer	Take-up	Take-Up Sensor		Paper present	Paper not present		IC1	P5	PJ3A-2B
S5		Paper Near Empty	Paper Near Empty Sensor		Unblocked	Blocked		IC1	P12	PJ3A-11B
S4		Paper Empty	Paper Empty Sensor		Paper not present	Paper present		IC1	P6	PJ3A-5B
S2		Side Cover	Side Cover Set Sensor		When opened	When closed		IC1	P9	PJ3A-8B
S1		Drawer Detect	Cassette Set Switch	When PF-110 is used	In position	Out of position		IC1	P10	PJ3A-9A
				When PF-108 is used	In position: 2 displayed Out of position: 0 displayed			IC1	P11	PJ3A-12A
——	Duplex/ Bypass	Duplex Set	Duplex Unit Set signal		In position	Out of position	Master Board PWB-A	IC1	P91	PJ4A-3B
PI1		Duplex Paper	Duplex Unit Transport Sensor		Paper present	Paper not present		IC1	P92	PJ4A-2B
S2		Duplex Cover	Duplex Unit Door Set Sensor		When opened	When closed		IC1	P90	PJ4A-1B
PC8		Paper Take-up	Manual Feed Paper Take-Up Sensor		Paper present	Paper not present		IC1	P00	PJ4A-7B
——		Bypass Set	Manual Bypass Tray Set signal		In position	Out of position		IC1	P30	PJ4A-9B

Symbol	Panel Display		Parts/Signal Name	Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.
				1	0				
LS1	LCC	Lift Level 1	Lift-Up Sensor 1	At upper limit	Not at upper limit	LCC Main Board PWB-A: PF-106	IC4	P74/ ANI4	CN4A-6
LS2		Lift Level 2	Lift-Up Sensor 2	At upper limit	Not at upper limit		IC4	P73/ ANI3	CN4A-9
RSEN		Registration	Registration Sensor	Paper present	Paper not present		IC4	P22/ INTP1	CN4A-2
S1		S1S	Paper Standby Position Sensor	Paper present ✻2	Paper not present ✻2		IC4	P23/ INTP2/ CI	CN3A-5
PPS0		PPS0S	LCC Take-Up Sensor	Paper present	Paper not present		IC4	P24/ INTP3	CN4A-11
PPS1		PPS1S	Paper Empty Sensor 1	Paper present	Paper not present		IC4	P25/ INTP4/ ASCK	CN3A-2
RS1		Paper Near Empty 1	Paper Near Empty Sensor 1	Blocked	Unblocked		IC4	P75/ ANI5	CN6A-1
RS2		Paper Near Empty 2	Paper Near Empty Sensor 2	Blocked	Unblocked		IC4	P76/ ANI6	CN5A-5
PPS2		Paper Empty	Paper Empty Sensor 2	Paper present	Paper not present		IC4	P72/ ANI2	CN3A-8
SW1		Paper Size	DIP switch	Letter C: 0 displayed A4C: 1 displayed B5C: 2 displayed			IC4	P13, P14, P15	———
TH1	Fusing Unit	Fusing Thermistor	Fusing Roller Thermistor	Analog value		Master Board PWB-A	IC1	P107/ AN7	PJ16A-5
——	I/C	I/C Discrimination	I/C Type Detection signal	Analog value			IC1	P100/ AN0	PJ15A-3
E1		ATDC	ATDC Sensor	Analog value			IC1	P106/ AN6	PJ15A-5
TH2		Drum Thermistor	I/C Thermistor	Analog value			IC1	P104/ AN4	PJ13A-10A

✻ 2: The display of 1 or 0 is selected only while LCC Transport Motor HMOT is being energized.

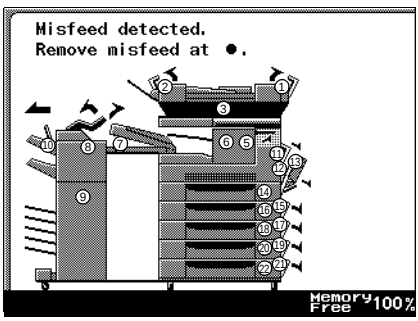
Symbol	Panel Display		Parts/Signal Name	Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.
				1	0				
SIDE	Doors/ Toner	LCC Side Cover	Side Cover Set Sensor	When opened	When closed	LCC Main Board PWB-A	IC4	P34/ T00	CN3A-12
FRONT		LCC Front Cover	LCC Set Sensor	Out of position	In position		IC4	P35/ T01	CN6A-4
S2		Side Cover	Side Cover Interlock Switch	When opened	When closed	Master Board PWB-A	IC1	P31	PJ7A-1
PC11		Toner Bottle Cover	Toner Bottle Cover Sensor	When opened	When closed		IC1	P33	PJ11A-5B
S4		Sub Hopper	Sub Hopper Toner Empty Switch	Toner not loaded: 1 and 0 alternately displayed. Toner loaded: 0 displayed			IC1	P06	PJ11A-7B
PC10		Toner Bottle Set	Toner Bottle Home Position Sensor	At home	Not at home		IC1	P40	PJ11A-2B
PC2	Paper Passage	Timing Roller	Synchronizing Roller Sensor	Paper present	Paper not present		IC1	P41	PJ13A-7A
PC3		Exit	Paper Exit Sensor	Paper present	Paper not present		IC1	P77	PJ13A-12A
M3	Drive Motor Detect	Cooling Fan	Fusing Cooling Fan Motor/LOCK	When energized: 1 and 0 alternately displayed. When deenergized: 0 displayed			IC1	P04	PJ13A-5A
M2		Main Motor	Main Motor/LOCK	When energized	When deenergized		IC1	P43	PJ16A-2
M1		I/U Motor	I/C Motor/LOCK	When energized	When deenergized		IC1	P42	PJ16A-4
M10		Polygon Motor	Polygon Motor/ LOCK	When energized	When deenergized		IC1	P95	PJ8A-4
M8		Ventilation Fan	Ozone Fan Motor	When energized: 1 and 0 alternately displayed. When deenergized: 0 displayed			IC1	P51	PJ11A-3A

3 PAPER TRANSPORT FAILURE

3-1. Paper Misfeed

When a paper misfeed occurs, the Touch Panel shows the corresponding message, misfeed location, and paper location.

⊗ display	Misfeed location
○ display	Paper location



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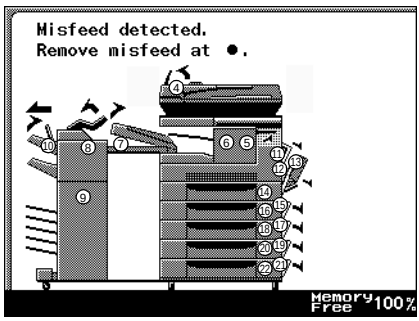

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⊗ or ○ Display	Misfeed/Paper Location	Ref. Page
1	AFR-14 take-up, AFR-14 single feed	See the relevant option service manual.
2	AFR-14 reverse, AFR-14 exit	
3	AFR-14 transport	
4	AF-7 take-up, AF-7 transport	
5	JS-200 transport	
6	JS-200 exit	
7	Horizontal transport	
8	Finisher transport, 1st Tray exit, Elevator Tray exit	
9	Mailbin transport	
10	Finisher Tray	
11	Separator, Fusing Unit	(3)
12	Manual Bypass take-up	(2)
13	Duplex turnover, Duplex take-up	(6)
14	1st Drawer take-up	(1)
15	2nd Drawer transport	(1)
16	2nd Drawer take-up	(1)
17	3rd Drawer transport (PF-108/PF-110/PF-106)	(4) or (5)
18	3rd Drawer take-up (PF-108/PF-110/PF-106)	(4) or (5)
19	4th Drawer transport (PF-108/PF-110/PF-106)	(4) or (5)
20	4th Drawer take-up (PF-108/PF-110/PF-106)	(4) or (5)
21	5th Drawer transport (PF-108/PF-110)	(4)
22	5th Drawer take-up (PF-108/PF-110)	(4)

✻ If a communications error occurs between UN2 and PWB-A during a copy cycle, it forces a paper misfeed condition (○ displayed on the Touch Panel). If that happens, check the circuit between UN2 and PWB-A for proper connection and, if it is intact, replace the board.

<Resetting the Display>

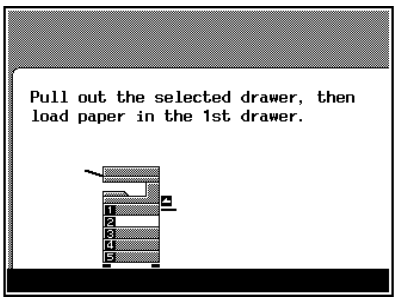
Misfeed in the copier	Misfeed in the option
Remove all sheets of paper misfed and left inside, and then open and close the Side Cover.	Remove all sheets of paper misfed and left inside, and then raise and lower or disconnect and reconnect the option.

✻ If the misfeed display is not reset by these procedures, check the misfeed detecting sensor at the paper location.

3-2. Size Error

The following warning screen appears after a misfeed display has been reset if the actual size of the paper loaded in a paper source differs from the paper size set for that particular paper source.

[1st to 5th Drawer]



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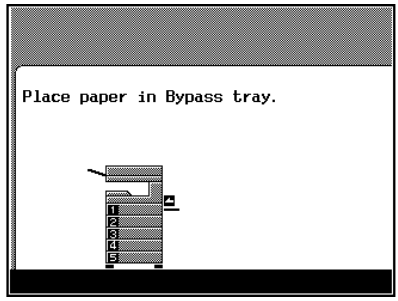
[Manual Bypass]



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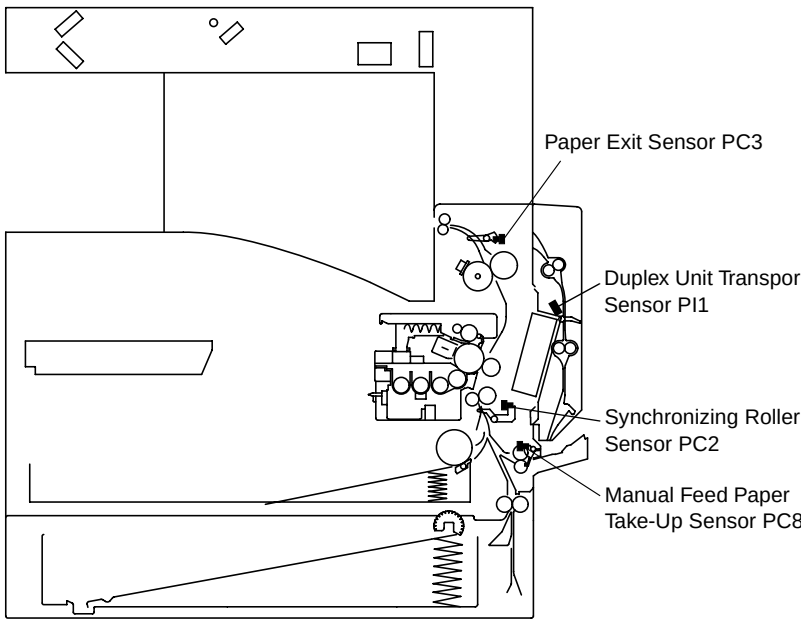
✻ 1st to 5th Drawer: A size error is indicated by a highlighted paper source in the copier overview display. (In the above example, there is a size error in the 2nd Drawer.)

<Resetting the Size Error Display>
Slide out the drawer, then slide it back in, or load paper in the Manual Bypass Tray.

<Causes of a Size Error>
- Wrong paper size settings have been made.
- The user loads paper of a size different from what is set for the paper source.
- Two or more sheets of paper are being taken up and fed in.

3-3. Misfeed Detection Sensor Layout


Paper Exit Sensor PC3
Duplex Unit Transport Sensor PI1
Synchronizing Roller Sensor PC2
Manual Feed Paper Take-Up Sensor PC8

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3-4. Types of Misfeed Detection and Detection Timings

- The following are the types of misfeed detection and detection timings for different misfeed locations.

NOTE
For misfeed detection types and detection timings of options, see the relevant option service manual.

<Copier Take-Up Misfeed>

Type	Detection Timing	Timer Value T (sec.)
Paper take-up failure detection	• 1st Drawer paper take-up: Synchronizing Roller Sensor PC2 is not unblocked (H) even after the lapse of T sec. after Paper Take-Up Solenoid SL1 has been energized for the second paper take-up retry sequence.	0.92
	• 2nd Drawer paper take-up: PC2 is not unblocked (H) even after the lapse of T sec. after SL1 has been energized for the first paper take-up retry sequence.	1.63
	• 1st/2nd Drawer paper take-up: PC2 is unblocked (H) within T sec. after SL1 has been energized.	0.20

<Manual Bypass Take-Up Misfeed>

Type	Detection Timing	Timer Value T (sec.)
Bypass paper take-up failure detection	PC2 is not unblocked (H) even after T sec. after Manual Feed Paper Take-Up Clutch CL3 has been energized.	0.64
	PC2 is unblocked (H) within T sec. after CL3 has been energized.	0.20
Paper left	Manual Feed Paper Take-Up Sensor PC8 is blocked (L) when the Power Switch is turned ON, CPU is reset, or cover is opened and closed.	———

<Separator Misfeed>

Type	Detection Timing	Timer Value T (sec.)
Leading edge detection by Paper Exit Sensor PC3	PC3 is not blocked (L) even after the lapse of T sec. after PC2 has been unblocked (H).	1.38 ✻
Trailing edge detection by Synchronizing Roller Sensor PC2	PC2 is not blocked (L) even after the lapse of T sec. after it has been unblocked (H).	3.02 ✻
	PC2 is blocked (L) within T sec. after it has been unblocked (H).	0.75
Paper is stationary	During a sequence of detecting a paper size based on the period of time between when Synchronizing Clutch CL1 is energized and when PC2 is blocked (L), the paper size detected is longer than the size data sent from the controller by +260 mm or more.	———
Size error detection	The paper size detected based on the period of time between when CL1 is energized and when PC2 is blocked (L) is more than the size data sent from the controller by ±20 mm or more.	———
Paper left	PC2 is unblocked (H) when the Power Switch is turned ON, CPU is reset, or cover is opened and closed.	———

✻ Excludes the period of time during which the paper is stationary before the Synchronizing Roller.

<Fusing Misfeed>

Type	Detection Timing	Timer Value T (sec.)
Trailing edge detection by Paper Exit Sensor PC3	PC3 is not unblocked (H) even after the lapse of T sec. after PC2 has been blocked (L).	1.41
Paper left	PC3 is blocked (L) when the Power Switch is turned ON, CPU is reset, or cover is opened and closed.	———

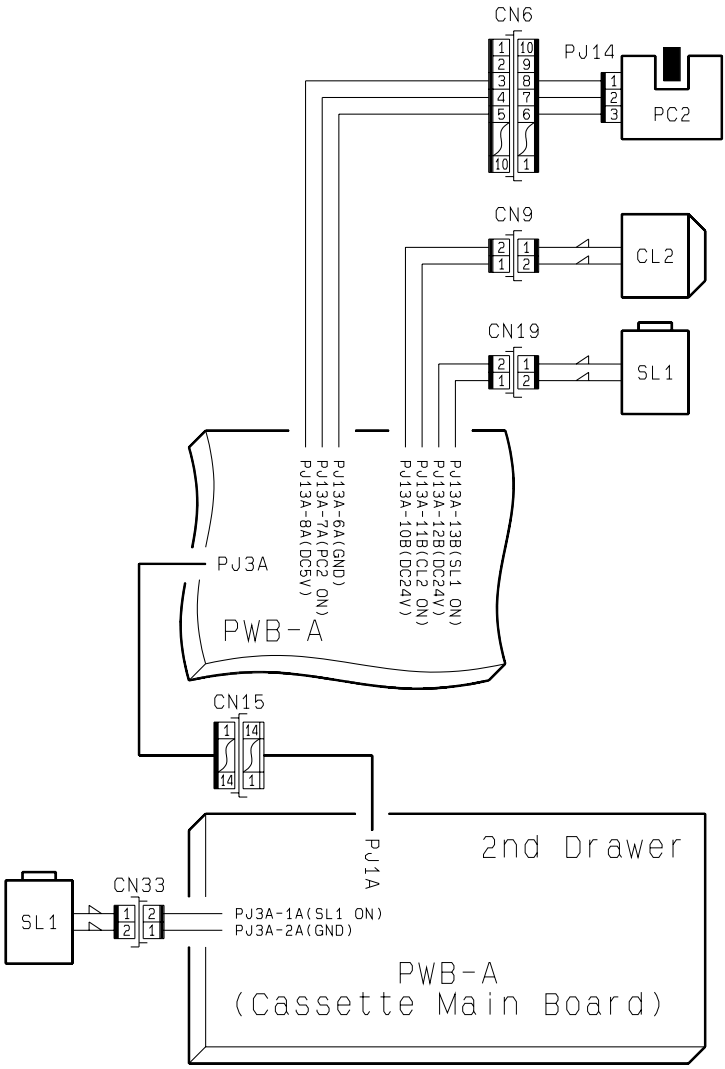
<Duplex Turnover/Take-Up Misfeed>

Type	Detection Timing	Timer Value T (sec.)
Leading edge detection during Duplex transport	Duplex Unit Transport Sensor PI1 is not blocked (H) even after the lapse of T sec. after Paper Exit Sensor PC3 has been unblocked (H).	1.52
Paper take-up failure detection	PC2 is not unblocked (H) even after the lapse of T sec. after the Duplex paper take-up sequence has been started.	0.88
	PC2 is unblocked (H) within T sec. after the Duplex paper take-up sequence has been started.	0.20
Paper left	PI1 is blocked (H) when the Power Switch is turned ON, CPU is reset, or cover is opened and closed.	———

3-5. Misfeed Troubleshooting Procedures

(1) Copier Take-Up Misfeed

Relevant Electrical Parts	
Paper Take-Up Solenoid SL1 Synchronizing Roller Sensor PC2	Master Board PWB-A Cassette Main Board PWB-A



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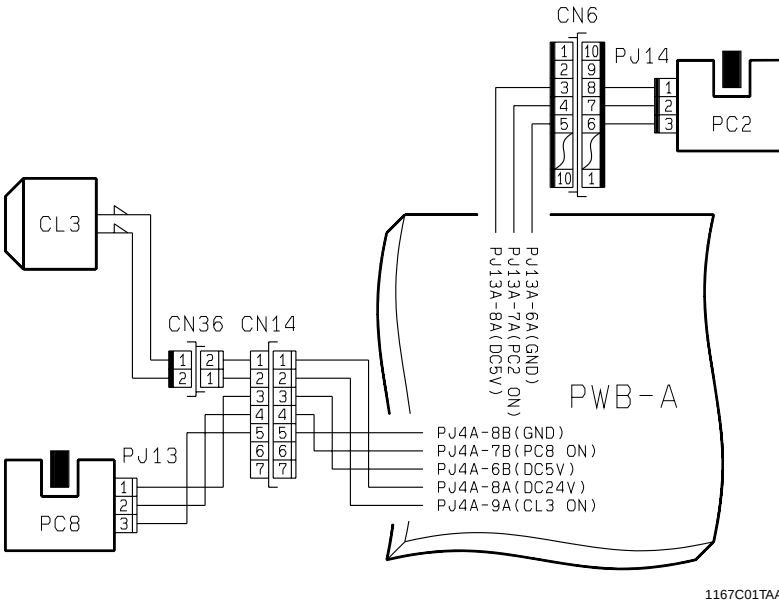
<Copier Take-Up Misfeed Troubleshooting Procedure>

Symptom	Step	Check Item	Result	Action
Paper is not taken up at all.	1	Does the paper being used meet the product specifications?	NO	Instruct the user to use the paper that meets product specifications.
	2	Is the paper curled, wavy, or damp?	YES	Change the paper. Instruct the user on the storage of paper.
	3	Are the Edge Guide and Trailing Edge Stop (of the drawer) positioned to the exact size of the paper used?	NO	Slide the guides to the exact size of the paper.
	4	Is the Paper Take-Up Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Take-Up Roll.
	5	If the Paper Lifting Plate dirty or deformed?	YES	Clean or change the Paper Lifting Plate.
	6	Has the misfeed been detected while the Multi Purpose Cassette was being used?	YES	Check steps 7 and 8.
			NO	Check steps 9 and onward.
	7	Is the Paper Separator Pad deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Separator Pad.
	8	Check SL1 for operation. Does the voltage across CN19-1 on the PWB-A side and GND change from DC24V to DC0V when the Start key is pressed?	YES	Check various parts for possible overload and, if they are okay, change SL1.
			NO	Change PWB-A.
	9	Is the Paper Separator Finger dirty or deformed?	YES	Clean or change the Paper Separator Finger.
	10	Check CL2 for operation. Does the voltage across CN9-1 on the PWB-A side and GND change from DC24V to DC0V when the Start key is pressed?	NO	Change PWB-A.
	11	Check SL1 for operation. Does the voltage across PJ3A-1A on PWB-A (Cassette Main Board) and GND change from LOW to HIGH when the Start key is pressed?	YES	Check various parts for possible overload and, if they are okay, change SL1 or CL2.
			NO	Change PWB-A (Cassette Main Board) or PWB-A.
• Paper is at a stop before the vertical transport section. • Paper is at a stop near the Synchronizing Rollers.	1	Is the Vertical Transport Roller deformed, worn, or dirty with paper dust?	YES	Clean or change the Vertical Transport Roller.
	2	If the Vertical Transport Guide Plate dirty or deformed?	YES	Clean or change the Vertical Transport Guide Plate.
	3	Is PC2 fully operational? Check the input data using I/O Check.	YES	Check various parts for possible overload and, if they are okay, change PWB-A.
			NO	Check the PC2 actuator for operation and, if it is intact, change PC2.

(2) Manual Bypass Take-Up Misfeed

Relevant Electrical Parts	
Manual Feed Paper Take-Up Clutch CL3 Synchronizing Roller Sensor PC2	Manual Feed Paper Take-Up Sensor PC8 Master Board PWB-A

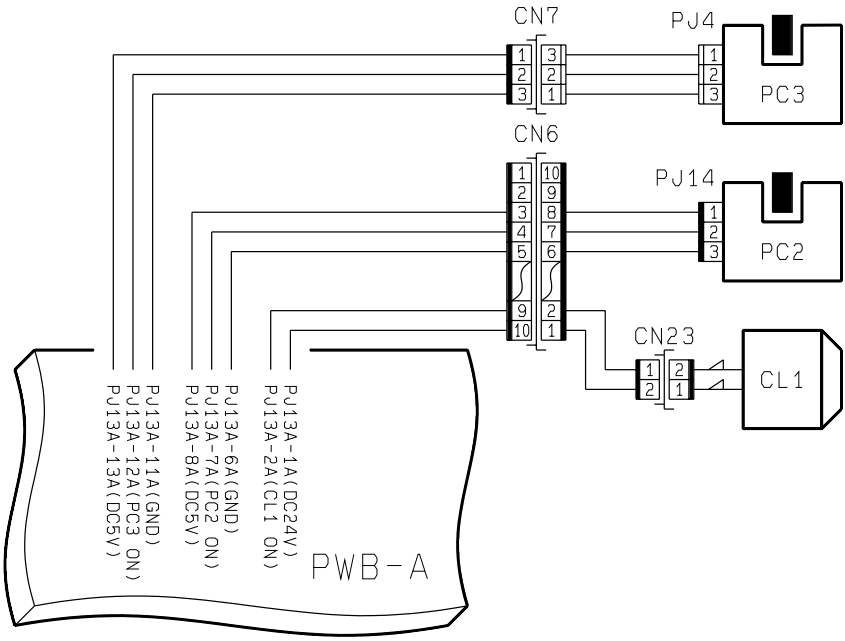


<Manual Bypass Take-Up Misfeed Troubleshooting Procedure>

Symptom	Step	Check Item	Result	Action
Paper is not taken up at all.	1	Does the paper being used meet the product specifications?	NO	Instruct the user to use the paper that meets product specifications.
	2	Is the paper curled, wavy, or damp?	YES	Change the paper. Instruct the user on the storage of paper.
	3	Is the Manual Feed Paper Take-Up Roller or Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Manual Feed Paper Take-Up Roller or Roll.
	4	Is PC8 fully operational? Check the input data using I/O Check.	NO	Check the PC8 actuator for operation and, if it is intact, change PC8.
	5	Check CL3 for operation. Does the voltage across CN14-2 and GND change from DC24V to DC0V when the misfeed condition is reset?	YES	Check various parts for possible overload and, if they are okay, change CL3.
			NO	Change PWB-A.
Paper is at a stop near the Synchronizing Rollers.	1	Is PC2 fully operational? Check the input data using I/O Check.	YES	Check various parts for possible overload and, if they are okay, change PWB-A.
			NO	Check the PC2 actuator for operation and, if it is intact, change PC2.

(3) Separator/Fusing Misfeed

Relevant Electrical Parts	
Paper Exit Sensor PC3	Synchronizing Clutch CL1
Synchronizing Roller Sensor PC2	Master Board PWB-A

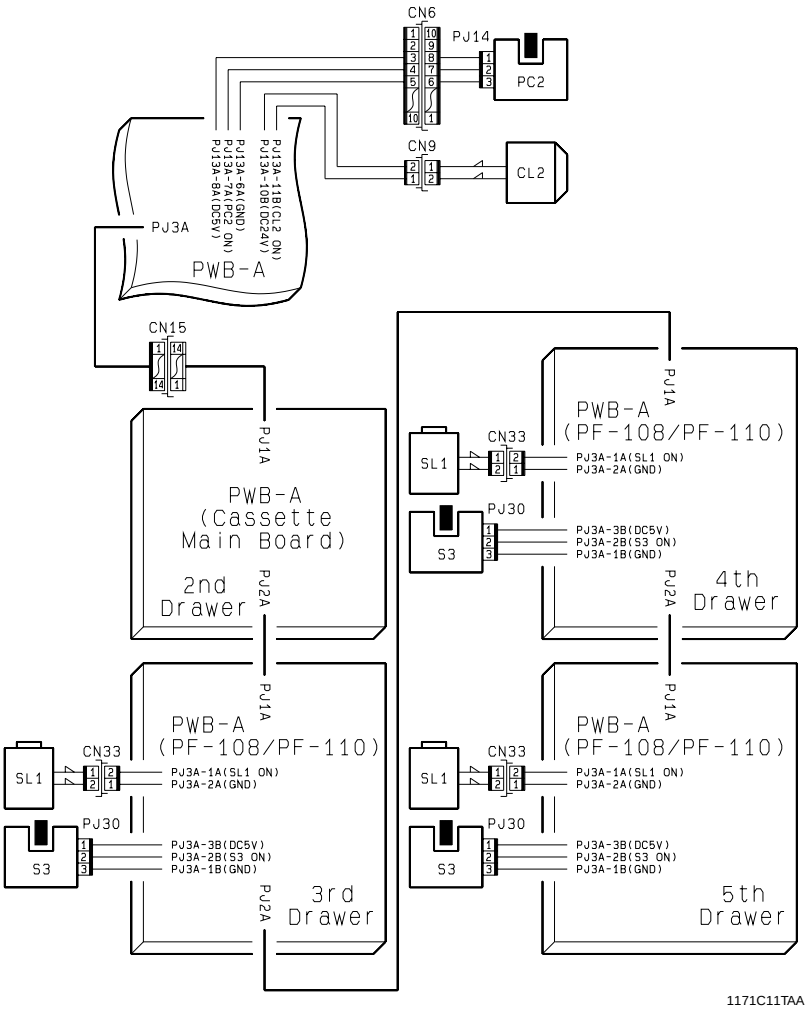


<Separator/Fusing Misfeed Troubleshooting Procedure>

Symptom	Step	Check Item	Result	Action
Paper is at a stop near the Synchronizing Rollers.	1	Are the Synchronizing Rollers deformed, worn, or dirty with paper dust?	YES	Clean or change the Synchronizing Rollers.
	2	Is a good length of loop formed before the Synchronizing Rollers?	NO	Select the following functions in this order: Tech. Rep. Mode → Tech. Rep. Choice → Printer → Loop Adjustment and make the loop adjustment.
	3	Is a size error displayed when the misfeed display is reset?	YES	Check that the size of the paper actually loaded in the current paper source matches the size set for it.
	4	Is PC2 fully operational? Check the input data using I/O Check.	NO	Check the PC2 actuator for operation and, if it is intact, change PC2.
	5	Check CL1 for operation. Does the voltage across CN6-9 on the PWB-A side and GND change from DC24V to DC0V when the Start key is pressed?	YES	Check various parts for possible overload and, if they are okay, change CL1.
			NO	Change PWB-A.
Paper is at a stop near the PC Drum.	1	Is the Pre-Image Transfer Guide Plate dirty or deformed?	YES	Clean or change the guide plate.
	2	Is the Image Transfer Roller deformed, worn, or dirty with paper dust?	YES	Clean or change the Image Transfer Roller.
Paper is wedged at the PC Drum Paper Separator Fingers.	1	Are the PC Drum Paper Separator Fingers dirty or deformed?	YES	Clean or change the separator fingers.
			NO	Check the clearance between the PC Drum Paper Separator Fingers and PC Drum.
Paper is at a stop before the Fusing Rollers.	1	Is the Fusing Guide Plate dirty or deformed?	YES	Clean or change the Fusing Guide Plate.
Paper is at a stop at the Fusing Rollers.	1	Are the Fusing Rollers deformed, worn, or dirty with paper dust?	YES	Clean or change the Fusing Rollers.
	2	Are the Fusing Separator Fingers dirty or deformed?	YES	Clean, correct, or change the Fusing Separator Fingers.
Paper is at a stop at the exit section.	1	Is the Paper Exit Roller deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Exit Roller.
	2	Is PC3 fully operational? Check the input data using I/O Check.	YES	Check various parts for possible overload and, if they are okay, change PWB-A.
			NO	Check the PC3 actuator for operation and, if it is intact, change PC3.

(4) Paper Take-Up/Transport Misfeed (PF-108/PF-110)

Relevant Electrical Parts	
Paper Take-Up Solenoid SL1	Master Board PWB-A
Take-Up Sensor S3	Cassette Main Board PWB-A
Synchronizing Roller Sensor PC2	Cassette Main Board PWB-A: PF-108/PF-110
Transport Clutch CL2	

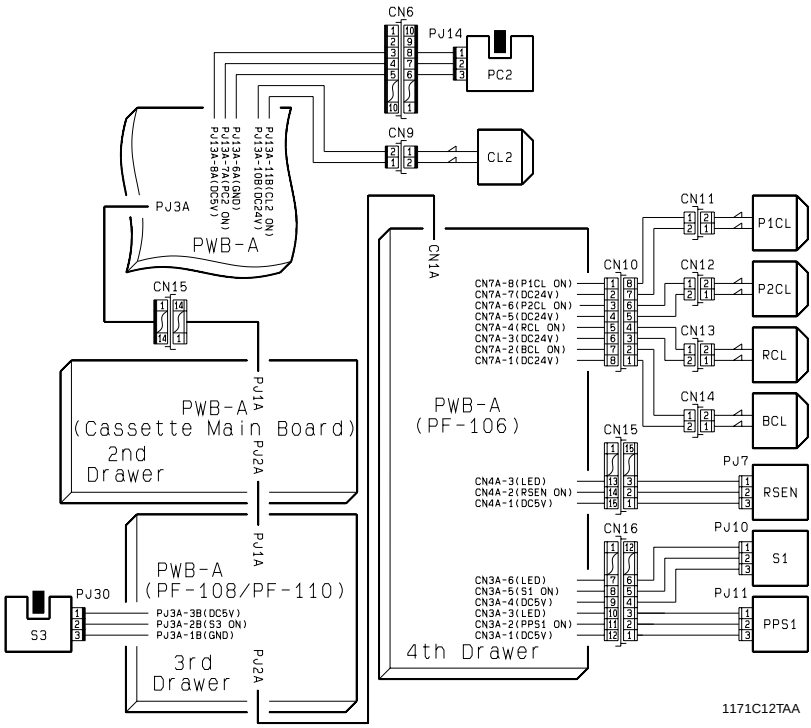


<Paper Take-Up/Transport Misfeed (PF-108/PF-110) Troubleshooting Procedure>

Symptom	Step	Check Item	Result	Action
Paper is not taken up at all.	1	Does the paper being used meet the product specifications?	NO	Instruct the user to use the paper that meets product specifications.
	2	Is the paper curled, wavy, or damp?	YES	Change the paper. Instruct the user on the storage of paper.
	3	Are the Edge Guide and Trailing Edge Stop (of the drawer) positioned to the exact size of the paper used?	NO	Slide the guides to the exact size of the paper.
	4	Is the Paper Take-Up Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Take-Up Roll.
	5	Is the Paper Lifting Plate dirty or deformed?	YES	Clean or change the Paper Lifting Plate.
	6	Is the Paper Separator Finger dirty or deformed?	YES	Clean or change the Paper Separator Finger.
	7	Check CL2 for operation. Does the voltage across CN9-1 on the PWB-A side and GND change from DC24V to DC0V when the Start key is pressed?	NO	Change PWB-A.
	8	Check SL1 for operation. Does the voltage across PJ3A-1A on PWB-A (PF-108/PF-110) and GND change from LOW to HIGH when the Start key is pressed?	YES	Check various parts for possible overload and, if they are okay, change SL1 or CL2.
			NO	Change PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.
• Paper is at a stop at the vertical transport section. • Paper is at a stop near the Synchronizing Rollers.	1	Is the Vertical Transport Roller deformed, worn, or dirty with paper dust?	YES	Clean or change the Vertical Transport Roller.
	2	Is the Vertical Transport Guide Plate dirty or deformed?	YES	Clean or change the Vertical Transport Guide Plate.
	3	Is a size error displayed when the misfeed display is reset?	YES	Check that the size of the paper loaded in the current drawer matches the size set for that drawer.
	4	✻ A misfeed is detected at the transport section of the 3rd Drawer. Is PC2 fully operational? Check the input data using I/O Check.	NO	Check the PC2 actuator for operation and, if it is intact, change PC2.
	5	Are all S3's fully operational? Check the input data using I/O Check.	YES	Check various parts for possible overload and, if they are okay, change PWB-A.
	6	Does the voltage across PJ3A-2B on PWB-A (PF-108/PF-110) and GND change to DC0V when S3 is blocked and to DC5V when S3 is unblocked?	YES	Change PWB-A (PF-108/PF-110) or PWB-A (Cassette Main Board).
			NO	Check the S3 actuator for operation and, if it is intact, change S3.

(5) Paper Take-Up/Transport Misfeed (PF-106)

Relevant Electrical Parts	
Take-Up Clutch 1 P1CL	Synchronizing Roller Sensor PC2
Take-Up Clutch 2 P2CL	Transport Clutch CL2
Paper Empty Sensor 1 PPS1	Take-Up Sensor S3
Paper Standby Position Sensor S1	LCC Main Board PWB-A: PF-106
Separator Clutch BCL	Cassette Main Board PWB-A: PF-108/PF-110
Registration Clutch RCL	Cassette Main Board PWB-A
Registration Sensor RSEN	Master Board PWB-A



<Paper Take-Up/Transport Misfeed (PF-106) Troubleshooting Procedure>

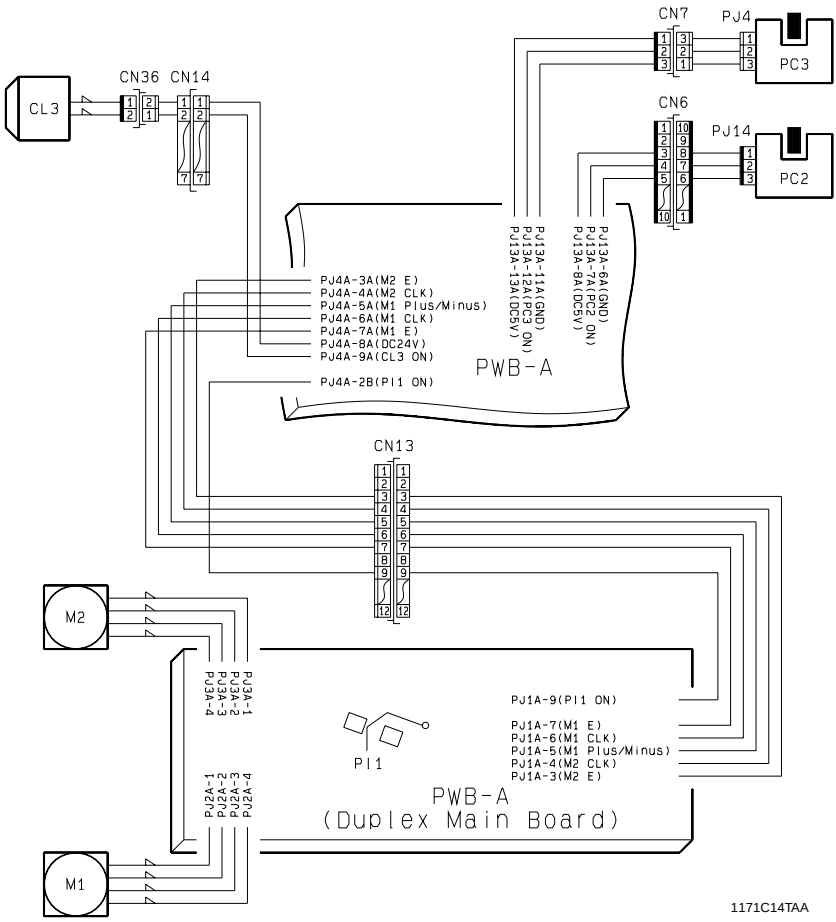
Symptom	Step	Check Item	Result	Action
• Paper is not taken up at all. • Paper is at a stop before the Paper Feed/ Separator Rolls.	1	Does the paper being used meet the product specifications?	NO	Instruct the user to use the paper that meets product specifications.
	2	Is the paper curled, wavy, or damp?	YES	Change the paper. Instruct the user on the storage of paper.
	3	Is the Paper Take-Up Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Take-Up Roll.

Symptom	Step	Check Item	Result	Action
• Paper is not taken up at all. • Paper is at a stop before the Paper Feed/ Separator Rolls.	4	Is PPS1 fully operational? Check the input data using I/O Check.	YES	Perform steps 6 and onward.
	5	Does the voltage across CN3A-2 on PWB-A (PF-106) and GND change from LOW to HIGH when PPS1 is blocked?	YES	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order.
			NO	Change PPS1.
	6	Is paper fed up to S1 when paper is loaded in Lift 2 only and the drawer is slid into the copier?	YES	Perform steps 8 and onward.
	7	Check P2CL for operation. Does the voltage across CN7A-6 on PWB-A (PF-106) and GND change from DC24V to DC0V when step 6 is performed again?	YES	Check various parts for possible overload and, if they are okay, change P2CL.
			NO	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.
	8	Check P1CL for operation. Does the voltage across CN7A-8 on PWB-A (PF-106) and GND change from DC24V to DC0V when step 6 is performed again?	NO	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.
	9	Is S1 fully operational? Check the input data using I/O Check. Does the “S1S” input signal change from 0 to 1 when the drawer loaded with paper is slid into the copier?	YES	Perform steps 11 and onward.
	10	Does the voltage across CN3A-5 on PWB-A (PF-106) and GND change from LOW to HIGH when step 9 is performed again?	YES	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order.
			NO	Change S1.
	11	Is the Paper Feed Roll or Separator Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Feed Roll or Separator Roll.
	12	Check BCL for operation. Does the voltage across CN7A-2 on PWB-A (PF-106) and GND change from DC24V to DC0V when the Start key is pressed?	YES	Check various parts for possible overload and, if they are okay, change P1CL or BCL.
			NO	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.

Symptom	Step	Check Item	Result	Action
• Paper is at a stop at the vertical transport section. • Paper is at a stop near the Synchronizing Rollers.	1	Is the Vertical Transport Roller or Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Vertical Transport Roller or Roll.
	2	Is RSEN fully operational? Check the input data using I/O Check.	YES	Check step 4 and onward.
	3	Does the voltage across CN4A-2 on PWB-A (PF-106) and GND change from LOW to HIGH when RSEN is blocked?	YES	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order.
			NO	Change RSEN.
	4	Check RCL for operation. Does the voltage across CN7A-4 on PWB-A (PF-106) and GND change from DC24V to DC0V when the Start key is pressed?	NO	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.
	5	Check CL2 for operation. Does the voltage across CN9-1 on PWB-A and GND change from DC24V to DC0V when the Start key is pressed?	NO	Change PWB-A.
	6	✻ If the 3rd Drawer is PF-106 Is PC2 fully operational? Check the input data using I/O Check.	YES	Check various parts for possible overload and, if they are okay, change RCL, CL2, or PWB-A, in that order.
			NO	Check the PC2 actuator for operation and, if it is intact, change PC2.
	7	✻ If the 4th Drawer is PF-106 Is S3 fully operational? Check the input data using I/O Check.	YES	Check various parts for possible overload and, if they are okay, change RCL, CL2, or PWB-A, in that order.
	8	Does the voltage across PJ3A-2B on PWB-A (PF-108/PF-110) and GND change to DC0V when S3 is blocked and to DC5V when S3 is unblocked?	YES	Change PWB-A (PF-108/PF-110) or PWB-A (Cassette Main Board).
			NO	Check the S3 actuator for operation and, if it is intact, change S3.

(6) Duplex Turnover/Take-Up Misfeed

Relevant Electrical Parts	
Paper Exit Sensor PC3	Duplex Unit Transport Motor M2
Duplex Unit Transport Sensor PI1	Manual Feed Paper Take-Up Clutch CL3
Synchronizing Roller Sensor PC2	Master Board PWB-A
Switchback Motor M1	Duplex Main Board PWB-A



<Duplex Turnover/Take-Up Misfeed Troubleshooting Procedure>

Symptom	Step	Check Item	Result	Action
Paper is at a stop near the exit section.	1	Is the Paper Exit Roller deformed, worn, or dirty with paper dust?	YES	Clean or change the Paper Exit Roller.
	2	Is PC3 fully operational? Check the input data using I/O Check.	NO	Check the PC3 actuator for operation and, if it is intact, change PC3.
	3	Check M1 for operation. Does the voltage across PJ1A-7 on PWB-A (Duplex Main Board) and GND change from DC5V to DC0V during a 2-sided copy cycle?	YES	Check gears for proper engagement.
			NO	Change PWB-A.
	4	Does the voltage across PJ1A-5 on PWB-A (Duplex Main Board) and GND change from DC5V to DC0V during a 2-sided copy cycle?	YES	Check various parts for possible overload and, if they are okay, change M1 or PWB-A (Duplex Main Board).
			NO	Change PWB-A.
Paper is at a stop inside the Duplex Unit.	1	Is the Duplex Unit Transport Roller or Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Duplex Unit Transport Roller or Roll.
	2	Is a torn piece of paper present on the paper path surface?	YES	Remove the torn piece of paper.
	3	Is the Manual Feed Take-Up Roller or Roll deformed, worn, or dirty with paper dust?	YES	Clean or change the Manual Feed Take-Up Roller or Roll.
	4	Check M2 for operation. Does the voltage across PJ1A-3 on PWB-A (Duplex Main Board) and GND change from DC5V to DC0V during a 2-sided copy cycle?	YES	Check gears for proper engagement.
			NO	Change PWB-A.
	5	Is PI1 fully operational? Check the input data using I/O Check.	NO	Check the PI1 actuator for operation and, if it is intact, change PWB-A (Duplex Main Board).
	6	Check CL3 for operation. Does the voltage across CN14-2 and GND change from DC24V to DC0V when paper is taken up from the Duplex Unit?	YES	Check various parts for possible overload and, if they are okay, change CL3 or M2.
			NO	Change PWB-A.
Paper is at a stop near the Synchronizing Rollers.	1	Is PC2 fully operational? Check the input data using I/O Check.	YES	Check various parts for possible overload and, if they are okay, change PWB-A.
			NO	Check the PC2 actuator for operation and, if it is intact, change PC2.

4 MALFUNCTION

The copier CPU has a function that self-diagnoses the copier conditions. On detection of a malfunction, the corresponding code representing a particular malfunction name, location, and details as listed below is displayed on the Touch Panel together with a Tech. Rep. call message.

- Perform the following steps to reset the malfunction.

Malfunction Resetting Procedure

- Turn OFF, then ON the Power Switch or open and close the Side Cover for all malfunctions except fusing-related ones (C05**).
- Use “Trouble Reset” of the “Initial” screen to reset all malfunctions including fusing-related ones (C05**).

4-1. Detection Timing by Malfunction Code

Code	Description	Detection Timing
C0000	Main Motor M2 malfunction	The Lock signal remains HIGH for a continuous 1-sec. period or more while M2 remains energized.
C0010	I/C Motor M1 malfunction	The Lock signal remains HIGH for a continuous 1-sec. period or more while M1 remains energized.
C0045	Fusing Cooling Fan Motor M3 malfunction	The Lock signal remains HIGH or LOW for a continuous 1-sec. period or more while M3 remains energized.
C004C	Ozone Fan Motor M8 malfunction	The Lock signal remains HIGH or LOW for a continuous 1-sec. period or more while M8 remains energized.
C004E	Power Unit Cooling Fan Motor M4	The Lock signal (analog input voltage) remains 0.4V or less for a continuous 0.5-sec. period or more while M4 remains energized.
C0070	Main Hopper Toner Replenishing Motor M6 malfunction	• Toner Bottle Home Position Sensor PC10 remains blocked (L) for a continuous 2-sec. period or more while M6 remains energized. • PC10 remains unblocked (H) for a continuous 6-sec. period or more while M6 remains energized.
C0050	Warming-up failure	The temperature of the Fusing Rollers do not reach the required level even after the lapse of a given period of time during a warming-up cycle. • From room temperature to 100°C: Within 65 sec. • From 100°C to 140°C: Within 25 sec. • From 140°C to 170°C: Within 20 sec. • From 170°C to the completion of warming-up: Within 22 sec.
C0510	Abnormally low fusing temperature	• The fusing temperature remains 130°C or less for a continuous 0.1-sec. period or more during the standby state or printing. • The fusing temperature remains 105°C or less for a continuous 2-min. period or more during the low-temperature standby state.
C0520	Abnormally high fusing temperature	The fusing temperature remains 230°C or more for a continuous 0.1-sec. period or more.

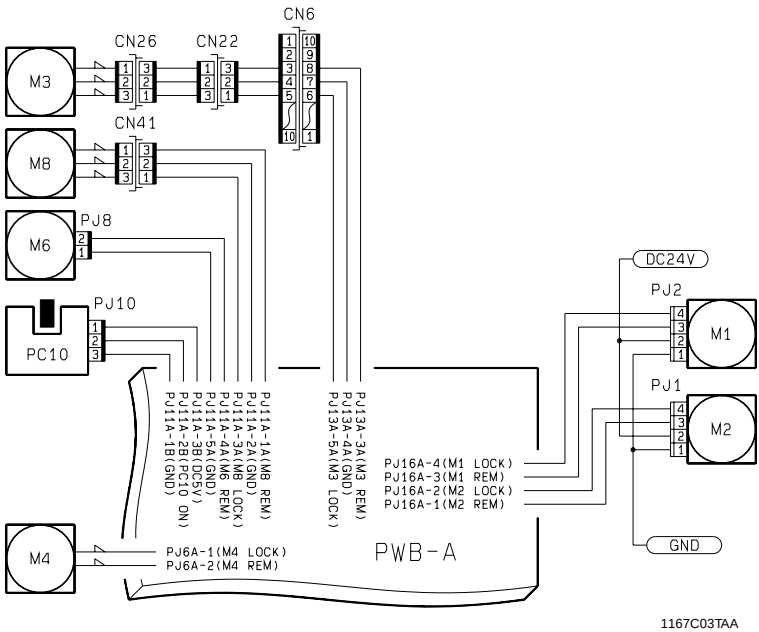
Code	Description	Detection Timing
C0650	Faulty Scanner Home Position Sensor 1 PC12	<The Power Switch is turned ON, Original Cover lowered, or Start key pressed when the Scanner is at its home position> • PC12 is not unblocked (H) even when the Scanner moves 10 mm to the left. • PC12 is not blocked (L) even when the Scanner moves 4 mm to the right after PC12 has been unblocked (H). <The Power Switch is turned ON, Original Cover lowered, or Start key pressed when the Scanner is at any position other than home> • PC12 is not blocked (L) even when the Scanner moves 469.5 mm to the right.
C0651	Faulty Scanner Home Position Sensor 2 PC13	When the Start key is pressed with a document loaded in the Document Feed Tray of AF-7, PC13 is not blocked (L) even when the Scanner moves 463 mm to the left after PC12 has been unblocked (H).
C0990	LCC Lift-Up Motor EMOT malfunction (PF-106)	✻ See option service manual.
C0991	Lift 1 ascent motion failure (PF-106)	
C0995	LCC Transport Motor HMOT malfunction (PF-106)	
C0999	Lift 2 ascent motion failure (PF-106)	
C099D	Communications error (PF-106)	
C0B00	Transport Motor M1 drive malfunction (FN-100/FN-500)	
C0B0F	Paper Entrance Switching Motor M1 drive malfunction (FN-100/FN-500)	
C0B30	CD Aligning Motor M4 drive malfunction (FN-100/FN-500)	
C0B38	Shift Motor M5 drive malfunction (FN-100/FN-500)	
C0B4D	Paper Holding Tray Motor M10 drive malfunction (FN-100/FN-500)	
C0B4E	Finisher Tray Motor M8 drive malfunction (FN-100/FN-500)	
C0B50	Stapling Motor drive malfunction (FN-100/FN-500)	
C0BA0	Elevator Motor M9 drive malfunction (FN-100/FN-500)	
C0F32	Faulty ATDC Sensor E1	The value of data read by E1 is faulty. [E1 reading is 7% or less (3.92V or more) or 19% or more (1.41V or less).]

Code	Description	Detection Timing
C0F33	ATDC adjustment failure	• In an F8 (ATDC control voltage automatic adjustment) operation, the adjustment of ATDC control voltage is not completed within 1 min. after E1 sampling. • In an F8 operation, the control voltage falls outside the range of 5.39V to 8.15V.
C1038	Engine connection error	• The system fails in checking initial engine connection when Power Switch S1 is turned ON. • The system succeeded in checking initial connection when S1 was turned ON; then it fails in rechecking initial connection through the execution of a software reset when a communications error occurs during operation.
C1300	Polygon Motor M10 malfunction	<Resolution selection failure detection> • The Lock signal is not detected for a given period of time after the resolution has been selected. (The Lock signal is not, however, detected for 1 sec. after the start.) <Faulty Lock signal detection> • No Lock signals are detected for the 1-sec. period which starts 1 sec. after the first Lock. ✻ First Lock: The first Lock signal following 1 sec. after the selection of start or half speed. <Out-of-timing Lock detection> • The Lock signal is not detected for a continuous 0.5-sec. period while M10 is in the stabilized turning state (after a Lock has been detected). <Abnormal Lock detection> • The Lock signal remains ON for a continuous 5-sec. period while M10 remains deenergized.
C133A	Communications error (G/A)	———————————————
C133B	Communications error (option I/F)	———————————————
C13C0	I/C initialization failure	After failing to blow the imaging cartridge fuse 2 consecutive times, 3.6V or more is detected and the I/C is determined to be new.
C13D0	Faulty EEPROM	No initial data is written in EEPROM.
C13F0	HSYNC detection failure	• The SOS rising edge is not detected even after the lapse of 0.2 sec. after Polygon Motor M10 has started and laser output started. • No SOS rising edges are detected while VIA remains ON.

4-2. Troubleshooting Procedures by Malfunction Code

(1) C0000: M2 Malfunction
C0010: M1 Malfunction
C0045: M3 Malfunction
C004C: M8 Malfunction
C004E: M4 Malfunction
C0070: M6 Malfunction

Relevant Electrical Parts	
I/C Motor M1	Main Hopper Toner Replenishing Motor M6
Main Motor M2	Ozone Fan Motor M8
Fusing Cooling Fan Motor M3	Toner Bottle Home Position Sensor PC10
Power Unit Cooling Fan Motor M4	Master Board PWB-A



C0000

Step	Check Item	Result	Action
1	Does M2 turn after the malfunction has been reset?	NO	Check various parts for possible overload.
2	Check M2 for operation. Does the voltage across PJ1-3 of M2 and GND change from DC5V to DC0V after the malfunction has been reset?	NO	Change PWB-A.
3	Does the voltage across PJ1-4 of M2 and GND change from DC5V to DC0V after the malfunction has been reset?	YES	Change PWB-A.
		NO	Change M2.

C0010

Step	Check Item	Result	Action
1	Does M1 turn after the malfunction has been reset?	NO	Check various parts for possible overload.
2	Check M1 for operation. Does the voltage across PJ2-3 of M1 and GND change from DC5V to DC0V after the malfunction has been reset?	NO	Change PWB-A.
3	Does the voltage across PJ2-4 of M1 and GND change from DC5V to DC0V after the malfunction has been reset?	YES	Change PWB-A.
		NO	Change M14.

C0045

Step	Check Item	Result	Action
1	Does M3 turn after the malfunction has been reset?	NO	Check the connector and harness between M3 and PWB-A.
2	Check M3 for operation. Does the voltage across CN6-8 on the PWB-A side and GND change from DC0V to DC24V after the malfunction has been reset?	NO	Change PWB-A.
3	Does the “C0045” display persist even after M3 has been replaced with a new one?	YES	Change PWB-A.

C004C

Step	Check Item	Result	Action
1	Does M8 turn after the malfunction has been reset?	NO	Check various parts for possible overload.
2	Check M8 for operation. Does the voltage across CN41-3 on the PWB-A side and GND change from DC0V to DC24V after the malfunction has been reset?	NO	Change PWB-A.
3	Does the “C004C” display persist even after M8 has been replaced with a new one?	YES	Change PWB-A.

C004E

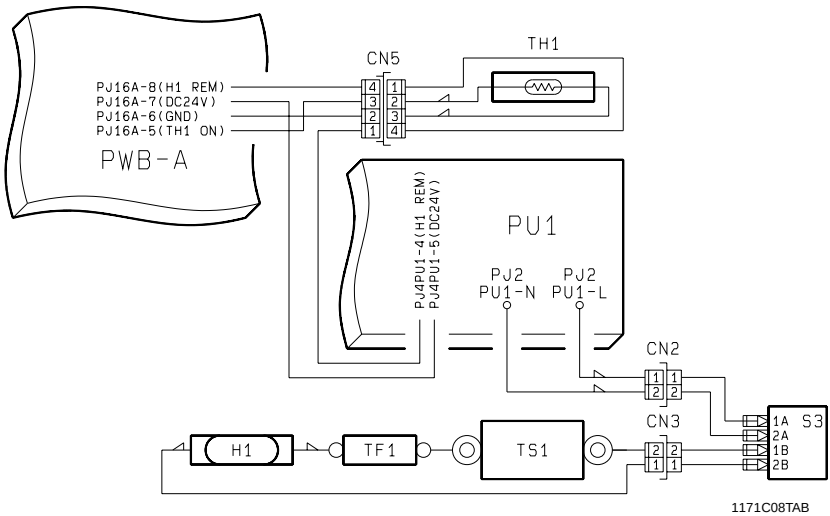
Step	Check Item	Result	Action
1	Does M4 turn after the malfunction has been reset?	YES	Change PWB-A.
2	Does the “C004E” display persist even after M4 has been replaced with a new one?	YES	Change PWB-A.

C0070

Step	Check Item	Result	Action
1	After the malfunction has been reset, remove the Rear Lower Cover and block Toner Bottle Cover Sensor PC11. Then, unlocking the Toner Bottle Lock Lever, turn the Toner Bottle a half turn by hand. Does the Toner Bottle turn when PC11 is unblocked (H) with the Toner Bottle Lock Lever kept unlocked?	YES	Perform step 3.
		NO	Check various parts for possible overload.
2	Does the voltage across PJ8-2 of M6 and GND change from DC0V to DC24V when step 1 is performed again?	YES	Change M6.
		NO	Change PWB-A.
3	Is PC10 fully operational? Check the input data using I/O Check. Does the input signal value for “Toner Bottle Set” change between “0” and “1” when the Toner Bottle is turned by hand?	YES	Change PWB-A.
		NO	Change PC10.

(2) C0500: Warming-up Failure
C0510: Abnormally Low Fusing Temperature
C0520: Abnormally High Fusing Temperature

Relevant Electrical Parts	
Fusing Roller Heater Lamp H1	Fusing Roller Heater Lamp Fuse TF1
Fusing Roller Thermistor TH1	Side Cover Interlock Switch 2 S3
Fusing Roller Thermostat TS1	Power Supply Unit 1 PU1
	Master Board PWB-A



C0500, C0510

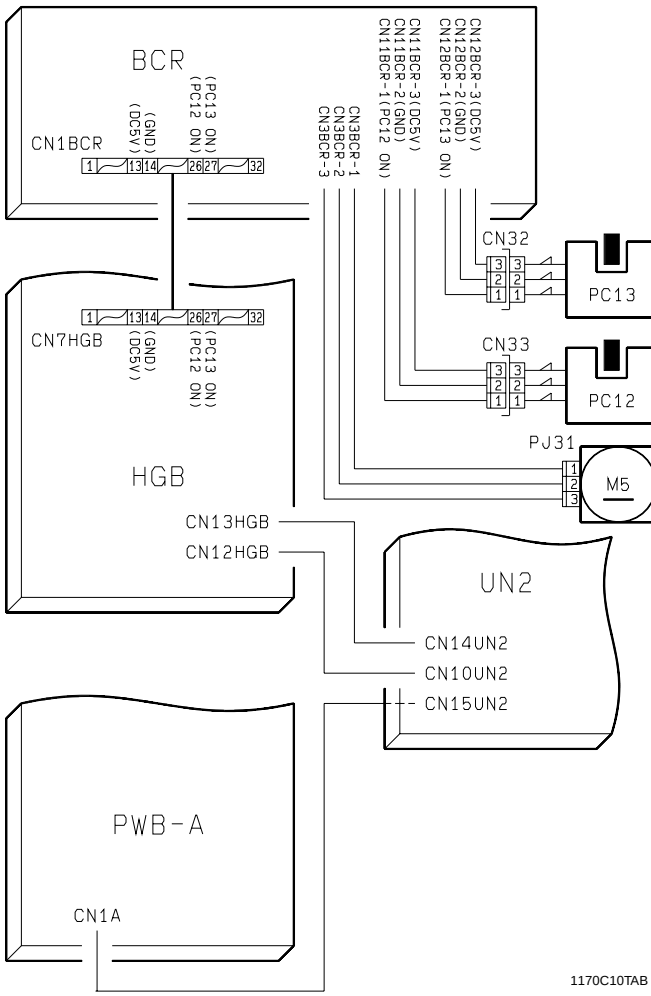
Step	Check Item	Result	Action
1	Does H1 turn ON after the malfunction is reset?	YES	Check TH1 for contamination or installation.
2	Is there continuity across CN3-1 and 2 on the Fusing Unit end with CN3 (2P) disconnected?	NO	Check H1, TS1, and TF1 for continuity.
3	Is there continuity across 1A and 1B, and across 2A and 2B, of S3 when S3 is turned ON?	NO	Change S3.
4	Is the resistance of TH1 (across CN5-2 and 3 on the Fusing Unit end) infinity?	YES	Change TH1.
5	Is Fuse F2 on PU1 conducting?	YES	Change PU1 or PWB-A.
		NO	Change the fuse.

C0520

Step	Check Item	Result	Action
1	Is TH1 installed properly?	NO	Install TH1 correctly.
2	Is TH1 dirty?	YES	Clean or change TH1.
3	Is the circuit across CN5-2 and 3 on the Fusing Unit end closed when CN5 (4P) is disconnected?	YES	Change TH1.
		NO	Change PWB-A or PU1.

(3) C0650: Faulty PC12
C0651: Faulty PC13

Relevant Electrical Parts	
Scanner Home Position Sensor 1 PC12	BCR Board BCR
Scanner Home Position Sensor 2 PC13	HGB Board HGB
Scanner Motor M5	MFB Board UN2
Master Board PWB-A	

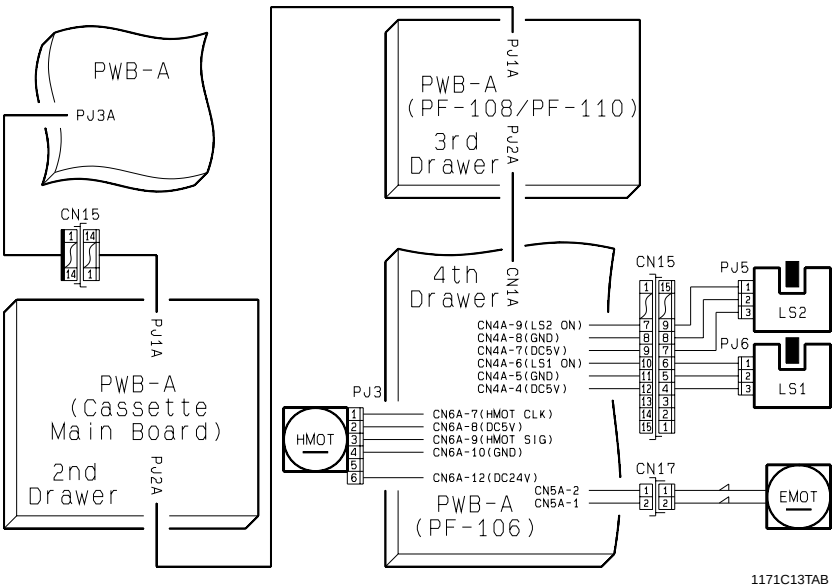


C0650, C0651

Step	Check Item	Result	Action
1	Is M5 energized? Select the following functions in this order: Tech. Rep. Mode → Movement Check → Scanner. Then, enter an appropriate value in “Absolute Position” or “Relative Position” and energize M5.	NO	Check various parts for possible overload and, if they are okay, change M5, BCR, HGB, UN2, or PWB-A, in that order.
2	Is “C0650” being displayed?	YES	Perform steps 3 and 4.
		NO	Perform steps 5 and 6.
3	Does the voltage across CN11BCR-1 on BCR and GND change from DC0V to DC5V when step 1 is performed a second time and PC12 is unblocked?	NO	Change PC12.
4	Does the voltage across CN1BCR-26 on BCR and GND change from DC0V to DC5V when step 3 is performed a second time?	YES	Change HGB, UN2, or PWB-A, in that order.
		NO	Change BCR.
5	Does the voltage across CN12BCR-1 on BCR and GND change from DC5V to DC0V when step 1 is performed a third time and PC13 is unblocked?	NO	Change PC13.
6	Does the voltage across CN1BCR-27 on BCR and GND change from DC0V to DC5V when step 5 is performed a second time?	YES	Change HGB, UN2, or PWB-A, in that order.
		NO	Change BCR.

(4) C0990: EMOT Malfunction
C0991: Lift 1 Ascent Motion Failure
C0995: HMOT Malfunction
C0999: Lift 2 Ascent Motion Failure
C099D: Communications Error

Relevant Electrical Parts	
LCC Lift-Up Motor EMOT	LCC Main Board PWB-A: PF-106
Lift-Up Sensor 1 LS1	Cassette Main Board PWB-A: PF-108/PF-110
Lift-Up Sensor 2 LS2	Cassette Main Board PWB-A
LCC Transport Motor HMOT	Master Board PWB-A



C0990

Step	Check Item	Result	Action
1	Does “C0990” reappear even after EMOT has been replaced with a new one?	YES	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.

C0991

Step	Check Item	Result	Action
1	Is LS1 fully operational? Check the input data using I/O Check.	YES	Perform step 3 and onward.
2	Does the voltage across CN4A-6 on PWB-A (PF-106) and GND change to DC5V when LS1 is blocked and to DC0V when LS1 is unblocked?	YES	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order.
		NO	Change LS1.
3	Does EMOT turn when a drawer loaded with paper is slid into the copier?	YES	Check gears and couplings for proper engagement and, if they are okay, change PWB-A.
4	Does the voltage across CN5A-1 on PWB-A (PF-106) and GND change from DC0V to DC24V when step 3 is performed again?	YES	Check various parts for possible overload and, if they are okay, change EMOT.
		NO	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.

C0995

Step	Check Item	Result	Action
1	Does “C0995” reappear even after HMOT has been replaced with a new one?	YES	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.

C0999

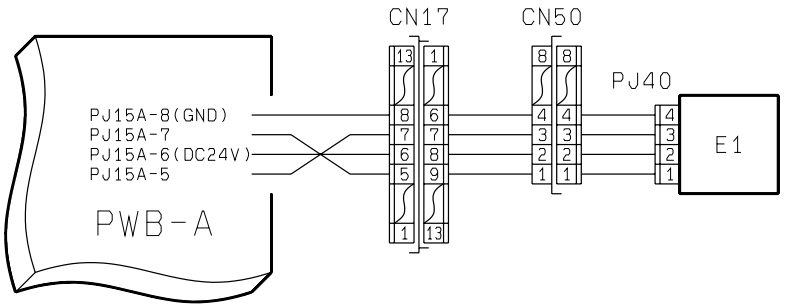
Step	Check Item	Result	Action
1	Is LS2 fully operational? Check the input data using I/O Check.	YES	Perform step 3 and onward.
2	Does the voltage across CN4A-9 on PWB-A (PF-106) and GND change to DC5V when LS2 is blocked and to DC0V when LS2 is unblocked?	YES	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order.
		NO	Change LS2.
3	Does EMOT turn when a drawer loaded with paper is slid into the copier?	YES	Check gears and couplings for proper engagement and, if they are okay, change PWB-A.
4	Does the voltage across CN5A-1 on PWB-A (PF-106) and GND change from DC0V to DC24V when step 3 is performed again?	YES	Check various parts for possible overload and, if they are okay, change EMOT.
		NO	Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.

C099D

Step	Check Item	Result	Action
1	Does “C099D” reappear even after PWB-A (PF-106) has been replaced with a new one?	YES	Change PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order.

(5) C0F32: Faulty E1
C0F33: ATDC Adjustment Failure

Relevant Electrical Parts	
ATDC Sensor E1	Master Board PWB-A



C0F32, C0F33

Step	Check Item	Result	Action
1	Are PJ40, CN50, CN17, and PWB-A PJ15A connected properly?	NO	Connect them properly.
2	Is the CN50 connection dirty?	YES	Clean.
3	Is “C0F32” or “C0F33” displayed even when an I/C with the same T/C as that of a new one has been installed?	NO	Change the I/C with a new one.
4	Is “C0F32” or “C0F33” displayed even when an I/C with the same T/C as that of a new one has been installed and an F8 operation run? (Be sure to record the ATDC control voltage setting value if an F8 operation is to be run.)	YES	Change PWB-A, install the old I/C, and return the ATDC control voltage setting to the value recorded. If “C0F32” or “C0F33” redisplayed, change the I/C with a new one.
		NO	Change the I/C with a new one.

(6) C10✻✻ to C13✻✻

- These malfunctions are concerned with faulty symptoms as they relate to software, hardware, and communications. For remedial actions, change the board, check for cable connections, and turn the Power Switch OFF and ON.

Code	Action
C1038	1. Check the connection between PWB-A and UN2, reset the malfunction, and turn OFF and ON the Power Switch. 2. If the same malfunction persists, change PWB-A or UN2.
C1300	1. Reset the malfunction and turn OFF and ON the Power Switch. 2. If the same malfunction persists, check the harnesses and PJs between UN3, PH Unit, and PWB-A and, if they are intact, change UN3, PH Unit, or PWB-A, in that order.
C133A	1. Reset the malfunction and turn OFF and ON the Power Switch. 2. If the same malfunction persists, check the connection between the copier PWB-A and A to E below: A. 2nd Drawer paper source unit B. 3rd Drawer paper source unit (PF-108/PF-110/PF-106) C. 4th Drawer paper source unit (PF-108/PF-110/PF-106) D. 5th Drawer paper source unit (PF-108/PF-110) E. Job Tray (JS-200) 3. If the connection is made properly, unplug the connector between the copier and A to E and turn OFF and ON the Power Switch. →If the malfunction code display persists, change the copier PWB-A. →If the malfunction is no longer detected, connect the connectors sequentially and turn OFF and ON the Power Switch. When “C133A” is detected, check the connector of the corresponding paper source unit and, if it is intact, change the PWB-A of the unit.
C133B	1. Reset the malfunction and turn OFF and ON the Power Switch. 2. If the same malfunction persists, check the connection between the copier PWB-A and Finisher PWB-A. 3. If the connection is made properly, unplug the connector between the copier and Finisher and turn OFF and ON the Power Switch. →If the malfunction code display persists, change the copier PWB-A. →If the malfunction is no longer detected, check the connector and, if it is intact, change the Finisher PWB-A.
C13C0	1. Reset the malfunction, turn OFF and ON the Power Switch, and reinstall the I/C. 2. If the malfunction is detected again, check the terminal block for the I/C fuse and HV1 and, if it is intact, change HV1 or PWB-A.
C13D0	1. Reset the malfunction, turn OFF and ON the Power Switch, and unplug the power cord and plug it back in. 2. If the malfunction is detected again, check the connection between IC3 on PWB-A and the EEPROM and, if it is good, change PWB-A. 3. If the malfunction is still detected, change the EEPROM. ✻ For the precautions to be observed when replacing the EEPROM, see DIS/REASSEMBLY, ADJUSTMENT.
C13F0	1. Reset the malfunction and turn OFF and ON the Power Switch. 2. If the same malfunction persists, check the harnesses and PJs between UN3, PH Unit, and PWB-A and, if they are intact, change UN3, PH Unit, or PWB-A, in that order.

(7) The Copier Does not Turn ON.

Relevant Electrical Parts	
Power Switch S1 Side Cover Interlock Switch 1 S2 Power Supply Unit 1 PU1 Power Supply Unit 2 PU2	Master Board PWB-A Control Panel UN1 MFB Board UN2

Symptom	Step	Check Item	Result	Action
Power does not turn ON.	1	Is there an AC power supply voltage across PJ1PU1-1 and 3 on PU1 when S1 is turned ON?	NO	Check S1, PU1 fuse, and power supply voltage.
	2	Is the voltage across PJ5PU1-10 and GND DC5V when S1 is turned ON?	YES	Check the fuse on PWB-A.
			NO	Change PU1.
	3	Is the voltage across PJ5PU1-4 and GND DC24V when S1 is turned ON?	NO	Change PU1.
	4	Is the voltage across PJ5PU1-3 and GND DC24V when S1 is turned ON?	NO	Change PU1.
	5	Does the voltage across the S2 connector (yellow) and GND change from DC0V to DC24V when S2 is turned ON?	NO	Check S2.
	6	Is the voltage across PJ7PU1-9 on PU1 and GND DC3.3V?	NO	Change PU1.
	7	Is the voltage across CN1PU2-1 on PU2 and GND DC24V?	NO	Change PU1.
	8	Is the voltage across CN28UN2-8 on UN2 and GND DC-12V?	NO	Change PU2.
	9	Is the voltage across CN28UN2-7 on UN2 and GND DC12V?	YES	Change PWB-A.
			NO	Change PU2.
The control panel indicates nothing.	1	Is DC24V being output from UN2 to UN1? Disconnect CN1UN1 of UN1 and check to see if the voltage across CN1UN1-1 on the harness side and GND is DC24V.	NO	Change UN2.
	2	Is DC5V being output from UN2 to UN1? Disconnect CN1UN1 of UN1 and check to see if the voltage across CN1UN1-28 on the harness side and GND, and across CN1UN1-29 and GND, is DC5V.	YES	Change UN1.
			NO	Change UN2.

5 IMAGE FAILURE

5-1. Image Failure Troubleshooting

Image failures have many possible causes. For troubleshooting, it is necessary to determine whether a failure is attributable to:
1. A basic cause or any other cause
2. The input system (IR) or output system (engine).

In this chapter, troubleshooting is divided into “initial checks” and “troubleshooting procedures classified by image failures.” If an image failure has occurred, first make the initial checks, then proceed to the corresponding image failure troubleshooting procedure.

5-2. Initial Checks

1. Place of installation
- Is the source voltage normal? Does the voltage vary greatly?
- Is the copier installed in a hot, humid place where temperature varies sharply?
- Is the copier installed in a dusty place?
- Is the copier subjected to direct sunlight?
- Is the copier level?

2. Copy paper
- Is the recommended paper used?
- Is the paper damp?
- Does the paper size set in the paper source match the size of the paper loaded in it?

3. Original
- Is the original written in light pencil?
  → Use the test chart to check the image.
- Is the original transparent, or are transparencies being used?
  → Place a blank sheet of paper over the original and make a copy.
- Is the Original Glass dirty or scratched?
  → Clean a dirty glass, or replace a scratched one.

4. Adjust data and Level History data
- Do the values set for “Adjust” and “Level History” fall within the specified range?

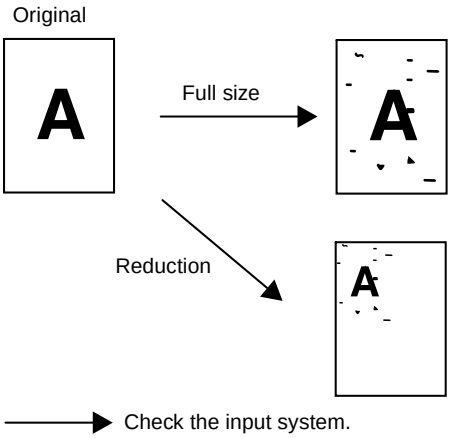
5. PM parts (supplies)
- Have the PM parts (supplies), such as the PC Drum, Cleaning Blade, and other parts that affect image quality, reached the end of their cleaning or replacement cycle?
- Are two or more imaging cartridges being used alternately?

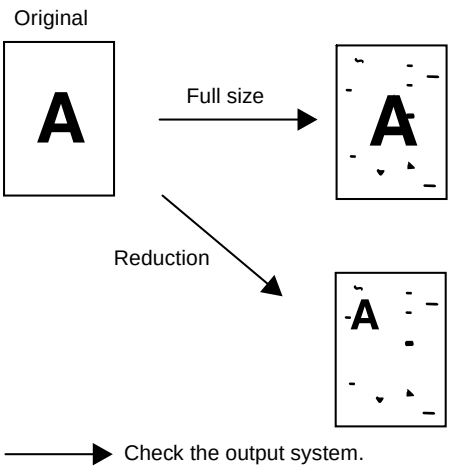
6. Adjustment items (registration, focus, etc.)

- Among the adjustment items given in DIS/REASSEMBLY, ADJUSTMENT, is there any adjustment that may remedy the image failure?

7. Input system (IR) or output system (engine)?

- Run “F12” which can be selected as follows: Tech. Rep. Mode → Function.
- If the test pattern output has the same problem as the copy image:
  → Check the output system.
- If the test pattern output is normal:
  → Check the input system.
- Make a copy at a different zoom ratio.





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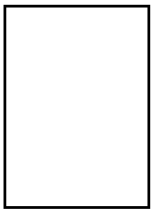
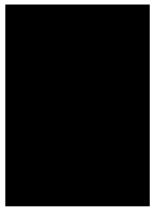
5-3. Troubleshooting Procedures by Image Failure

<Image Failure Samples>

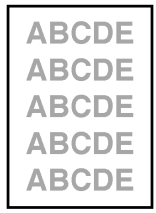
1. Blank copy



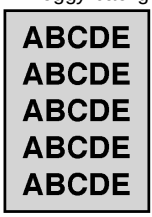
2. Black copy



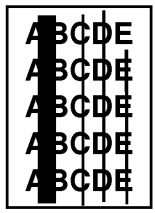
3. Low image density



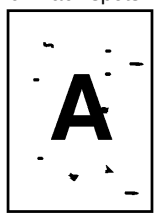
4. Foggy background



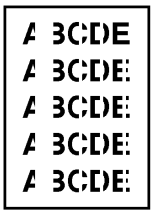
5. Black streaks or bands



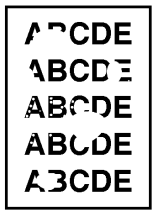
6. Black spots



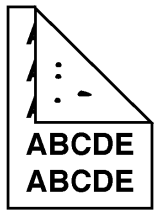
7. Blank streaks or bands



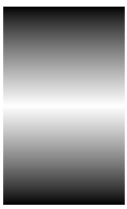
8. Void areas



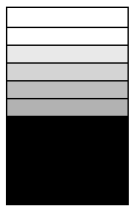
9. Smear on back



10. Uneven image density



11. Gradation reproduction failure



12. Rough image

13. Periodically uneven image

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(1) Blank Copy

Section	Step	Check Item	Result	Action
Engine	1	Is toner empty?	YES	Check Sub Hopper Toner Empty Switch S4 and change the Toner Bottle.
	2	Is the drive transmission mechanism to the Developing Unit in good condition?	NO	Check and change as necessary.
	3	Is the image transfer current terminal intact?	NO	Check and change as necessary.
	4	Does the laser shutter (the one located on the laser beam path between the PH Unit and PC Drum) open and close properly?	NO	Adjust so that the shutter opens and closes properly.
	5	Does the I/C Shutter open and close properly?	YES	Change HV1, PH Unit, or PWB-A, in that order.
			NO	Adjust so that the shutter opens and closes properly.
IR	1	Is the Scanner drive transmission mechanism in good condition?	NO	Check and change as necessary.
	2	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	3	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(2) Black Copy

Section	Step	Check Item	Result	Action
Engine	1	Is the PC Drum charge voltage terminal in good condition?	NO	Check and change as necessary.
	2	Is the grid voltage terminal in good condition?	NO	Check and change as necessary.
	3	Is the developing bias terminal in good condition?	NO	Check and change as necessary.
	4	Does a black copy persist even after the I/C has been replaced with a new one?	YES	Change HV1 or PWB-A.
IR	1	Does the Exposure Lamp turn ON when "ON" is selected for "Lighting Exposure Lamp"? "Lighting Exposure Lamp" can be selected as follows: Tech. Rep. Mode → Movement Check → Scanner.	YES	Perform steps 4 and onward.
			NO	Check connectors and harnesses and perform steps 2 and 3.
	2	Does the voltage across CN13BCR-1 on BCR and GND change from DC24V to DC0V when step 1 is performed again?	NO	Change BCR, HGB, or UN2, in that order.
	3	Is an AC voltage output from INV to Exposure Lamp when step 1 is performed again?	YES	Change LA2.
			NO	Change INV.
	4	Are the mirrors and lens installed properly?	NO	Install them properly.
	5	Are the mirrors and lens dirty?	YES	Clean or change.

(3) Low Image Density

Section	Step	Check Item	Result	Action
Engine	1	Does the image get better when a copy is made with new paper loaded?	YES	Change the paper. Instruct the user on the storage of paper.
	2	Is toner empty?	YES	Check Sub Hopper Toner Empty Switch S4 and change the Toner Bottle.
	3	Is the image transfer current terminal intact?	NO	Check and change as necessary.
	4	Is the developing bias terminal intact?	NO	Check and change as necessary.
	5	Does the image density remain low even after the I/C has been replaced with a new one?	NO	This completes the procedure.
	6	Does the image density become higher when the “Image Density” value is changed toward the plus side? “Image Density” can be selected as follows: Tech. Rep. Mode → Tech. Rep. Choice → Printer.	YES	This completes the procedure.
	7	Does the image density become higher when the “VG Adjust” value is changed toward the plus side? “VG Adjust” can be selected as follows: Tech. Rep. Mode → Tech. Rep. Choice → Printer.	YES	This completes the procedure.
			NO	Change HV1, HGB, or UN2, in that order.
IR	1	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	2	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(4) Foggy Background

Section	Step	Check Item	Result	Action
____	1	Is sunlight or any other extraneous light entering the copier?	YES	Protect the copier from extraneous light.
Engine	1	Is the PC Drum dirty with foreign matter?	YES	Clean the PC Drum.
	2	Is the PC Drum charge voltage terminal in good condition?	NO	Check and change as necessary.
	3	Is the grid voltage terminal in good condition?	NO	Check and change as necessary.
	4	Is the developing bias terminal in good condition?	NO	Check and change as necessary.
	5	Is the Charge Neutralizing Sheet voltage terminal in good condition?	NO	Check and change as necessary.
	6	Is Eraser Lamp LA1 dirty?	YES	Clean.
	7	Does foggy background persist even after the I/C has been replaced with a new one?	NO	This completes the procedure.
	8	Does foggy background persist when the “Image Density” value is changed toward the minus side? “Image Density” can be selected as follows: Tech. Rep. Mode → Tech. Rep. Choice → Printer.	NO	This completes the procedure.
	9	Does foggy background persist when the “VG Adjust” value is changed toward the minus side? “VG Adjust” can be selected as follows: Tech. Rep. Mode → Tech. Rep. Choice → Printer.	YES	Change HV1, PH Unit, or PWB-A, in that order.
			NO	This completes the procedure.
IR	1	Are the mirrors and lens dirty?	YES	Clean or change.
	2	Is the Exposure Lamp dirty or deteriorated?	YES	Clean or change.
	3	Do the connections between the Exposure Lamp and INV remain intact?	NO	Reconnect.
	4	Do the connections from INV to BCR remain intact?	NO	Reconnect.
	5	Do the connections from BCR to HGB remain intact?	NO	Reconnect.
	6	Do the connections from HGB to UN2 remain intact?	YES	Change INV, BCR, HGB, or UN2, in that order.
			NO	Reconnect.

(5) Black Streaks or Bands

Section	Step	Check Item	Result	Action
Engine	1	Is the PC Drum dirty?	YES	Clean the PC Drum.
	2	Has toner spilled from the I/C inside of the copier?	YES	Clean the interior and change I/C.
	3	Is the PC Drum charge voltage terminal in good condition?	NO	Check and change as necessary.
	4	Is the grid voltage terminal in good condition?	NO	Check and change as necessary.
	5	Are the Fusing Rollers dirty with foreign matter?	YES	Clean or change the Fusing Rollers.
			NO	Change I/C.
IR	1	Are the mirrors, lens, and Original Glass dirty with foreign matter?	YES	Clean the mirrors, lens, and Original Glass.
	2	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	3	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(6) Black Spots

Section	Step	Check Item	Result	Action
Engine	1	Is the PC Drum dirty?	YES	Clean the PC Drum.
	2	Has toner spilled from the I/C inside of the copier?	YES	Clean the interior and change I/C.
	3	Is the PC Drum charge voltage terminal in good condition?	NO	Check and change as necessary.
	4	Is the grid voltage terminal in good condition?	NO	Check and change as necessary.
	5	Are the Fusing Rollers dirty with foreign matter?	YES	Clean or change the Fusing Rollers.
			NO	Change I/C.
IR	1	Are the mirrors, lens, and Original Glass dirty with foreign matter?	YES	Clean the mirrors, lens, and Original Glass.
	2	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	3	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(7) Blank Streaks or Bands

Section	Step	Check Item	Result	Action
Engine	1	Is the PC Drum dirty with foreign matter?	YES	Clean the PC Drum.
	2	Is the image transfer current terminal intact?	YES	Check and change as necessary.
	3	Is the Image Transfer Roller dented or scratched?	YES	Change the Image Transfer Roller.
	4	Are the Fusing Rollers scratched or dirty?	YES	Clean or change the Fusing Rollers.
	5	Is the PH Unit window glass dirty?	YES	Clean the window glass.
	6	Is the light path between PH and PC dirty with dust?	YES	Remove dust.
			NO	Change the I/C.
IR	1	Is the Shading Sheet on the Original Glass dirty?	YES	Clean or change.
	2	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	3	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(8) Void Areas

Section	Step	Check Item	Result	Action
Engine	1	Does the image get better when a copy is made with new paper loaded?	YES	Change the paper. Instruct the user on the storage of paper.
	2	Is the Image Transfer Roller installed correctly?	NO	Install correctly.
	3	Is the Image Transfer Roller dented or scratched?	YES	Change the Image Transfer Roller.
	4	Is the image transfer current terminal intact?	NO	Check and change as necessary.
	5	Are the Fusing Rollers scratched or deformed?	YES	Change the Fusing Rollers.
			NO	Change the I/C.
IR	1	Is the Original Glass dirty?	YES	Clean or change.
	2	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	3	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(9) Smear on Back

Section	Step	Check Item	Result	Action
Engine	1	Is the Image Transfer Roller dirty?	YES	Clean or change.
	2	Has toner spilled from the I/C inside of the copier?	YES	Clean the interior and change I/C.
	3	Are the Fusing Rollers dirty?	YES	Clean or change the Fusing Rollers.

(10) Uneven Image Density

Section	Step	Check Item	Result	Action
Engine	1	Is the Image Transfer Roller dirty or deteriorated?	YES	Clean or change the Image Transfer Roller.
	2	Does the image get better when a copy is made with new paper loaded?	YES	Change the paper. Instruct the user on the storage of paper.
			NO	Change the I/C or PWB-A.
IR	1	Are the Original Glass, mirrors, and lens dirty with foreign matter?	YES	Clean the Original Glass, mirrors, and lens.
	2	Is the Shading Sheet on the Original Glass dirty?	YES	Clean or change.
	3	Is the Exposure Lamp dirty or deteriorated?	YES	Clean or change.
	4	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	5	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(11) Gradation Reproduction Failure

Section	Step	Check Item	Result	Action
Engine	1	Does the image get better when a copy is made with new paper loaded?	YES	Change the paper. Instruct the user on the storage of paper.
			NO	Change PWB-A.
IR	1	Is the Shading Sheet dirty?	YES	Clean or change.
	2	Is the Original Glass dirty?	YES	Clean or change.
	3	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	4	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(12) Rough Image

Section	Step	Check Item	Result	Action
Engine	1	Is the Image Transfer Roller dirty?	YES	Clean or change.
	2	Is the image transfer current terminal intact?	YES	Change HV1, I/C, PH Unit, or PWB-A, in that order.
			NO	Check and change as necessary.
IR	1	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	2	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

(13) Periodically Uneven Image

Section	Step	Check Item	Result	Action
Engine	1	Is the Developing Unit drive gear cracked or dirty with foreign matter?	YES	Clean or change.
	2	Is the PC Drum drive gear cracked or dirty with foreign matter?	YES	Clean or change.
	3	Is the Synchronizing Roller drive gear cracked or dirty with foreign matter?	YES	Clean or change.
	4	Is the Fusing Unit drive gear cracked or dirty with foreign matter?	YES	Clean or change.
	5	Is the PH Assy secured properly?	YES	Change the I/C or PWB-A.
			NO	Secure properly.
IR	1	Is the Scanner Motor drive gear cracked or dirty with foreign matter?	YES	Clean or change.
	2	Is the Scanner Motor secured properly?	NO	Secure properly.
	3	Is the Scanner secured properly?	NO	Secure properly.
	4	Are the Scanner Drive Cables wound properly?	NO	Wind the cables properly.
	5	Are the Scanner rails damaged or dirty with foreign matter?	YES	Clean or change.
	6	Do the connections from CCD to HGB remain intact?	NO	Reconnect.
	7	Do the connections from HGB to UN2 remain intact?	YES	Change CCD, HGB, or UN2, in that order.
			NO	Reconnect.

Di350 MAINTENANCE SCHEDULE

This Maintenance Schedule is intended to be used as reference information for establishing effective field service activities. To keep the copiers in as optimum a condition as possible, it is recommended that the maintenance jobs described in this schedule be carried out.

It should be noted, however, that frequency of maintenance jobs determined by the number of copies is simply a guideline. Therefore, service management personnel can revise or amend this schedule by taking into account their own individual field experiences. We feel that this will ensure more effective copier maintenance for your customers.

* This time interval (the number of copies produced) at which each component is cleaned or replaced is determined based on the average service life of the component. More or less frequent cleaning or replacement will be necessary depending on the actual image quality and paper passage performance.

NOTE: All information in this Maintenance Schedule is subject to change without prior notice.

C: Cleaning R: Replacement Unit: 1000 Copies

■ PAPER TAKE-UP/TRANSPORT SECTION

K=1,000 copies

PM Parts	Maintenance Cycle (K)		Parts No.	QTY	Reference Page
	Clean	Replace			
Paper Take-Up Roll	-	120	1164-3001-01	1	D-10
Paper Dust Remover	60	120	1165-0756-01	1	D-10
Side Cover	60	-	-	-	D-11
Duplex Unit Cover	60	-	-	-	D-11

■ OPTICAL SECTION

PM Parts	Maintenance Cycle (K)		Parts No.	QTY	Reference Page
	Clean	Replace			
Mirrors/Lens	120	-	-	-	D-16
Scanner Rails/Bushings	60	-	-	-	D-15
Original Glass	60	-	-	1	D-16

■ IMAGE TRANSFER SECTION

PM Parts	Maintenance Cycle (K)		Parts No.	QTY	Reference Page
	Clean	Replace			
Image Transfer Roller	-	150	1164-0335-01	1	D-23
Comb Electrode	60	-	-	1	D-23
Pre-Image Transfer Guide Plate	60	-	-	1	D-24

■ DEVELOPING SECTION

PM Parts	Maintenance Cycle (K)		Parts No.	QTY	Reference Page
	Clean	Replace			
Imaging Cartridge	-	72	-	1	D-25

■ TONER HOPPER UNIT

PM Parts	Maintenance Cycle (K)		Parts No.	QTY	Reference Page
	Clean	Replace			
Ozone Filter	-	100	1165-2031-01 *1 1165-2032-01 *2	1	D-24

*1: Except Europe

*2: Europe

■ FUSING SECTION

K=1,000 copies

PM Parts	Maintenance Cycle (K)		Parts No.	QTY	Reference Page
	Clean	Replace			
Fusing Unit	-	300	-	1	D-26

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